The Use of the Theory of Similarity in the Design of Electro-Magnets

magnetisation curves of the steels should both be the same. (It is this part of the article that is mainly criticised in the editorial note). The main similarity relationship between two electro-magnets that are geometrically similar are then given. The author considers in turn and gives formulae for: the relationship between the ampere turns of the coils; the relationship between the tractive efforts; the relationship between the copper losses in the coils; and the relationship between the temperature rises in the coils. The fact that the temperature rises are in the ratio of the constant of proportionality, as will be seen from Eq (5), is one of the main difficulties in using the theory of similarity for the design of electro magnets, for if one of the magnets is of correct temperature rise the other will either be too hot or wasteful of materials. To obtain the optimum design it is necessary to vary the dimensions of the coils and magnetic system, and accordingly several variants must be designed. A further difficulty is that the magnetic induction remains the same irrespective of the dimensions of the magnet and the magnitude of the

SOV/110-59-4-10/23

AUTHOR: Mogilevskiy, G.V. (Candidate of Technical Sciences)

TITLE: The Use of the Theory of Similarity in the Design of Electro-Magnets (Primeneniye teorii podobiya k proyektirovaniyu elektromagnitov)

PERIODICAL: Vestnik Elektropromyshlennosti, 1959, Nr 4, pp 34-38 (USSR)

ABSTRACT: An editorial note states that the article does not make the fullest possible use of the theory of similarity for the design of electro magnets but nevertheless it is of interest both as an example of application of the theory of similarity to the design of apparatus and as offering a practical design procedure. Existing methods of designing electro magnets are empirical, indirect, inaccurate and laborious; improved design procedures are much needed. The theory of similarity can be a help to rapid and accurate designing but its usefulness is limited by absence of experience of design by this method, by certain inadequacies of the theory of similarity, and by the absence of systematic experimental data on different types of electro-magnets. It is stated that for two electro magnets to be similar they must be geometrically similar and the physical constants of the magnets must be the same at corresponding positions and in particular the

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contact spring.
Because of the simplifying assumptions adopted this approximate method of calculation gives high values. In a more correct treatment it would be necessary to allow for the influence of the elasticity of the material from which the contacts are made.
There are 5 figures and 5 Soviet references.

ASSOCIATION: Kafedra teoreticheskikh osnov elektrotekhniki, Tomskiy politekhnicheskiy institut (Chair of Theoretical Fundamentals of Electrical Engineering, Tomsk polytechnical Institute)

SUBMITTED: January 12, 1959

If the initial pressure is low or the initial velocity small, this formula can be considerably simplified to the form of (11). It is found that the first rebound occupies 78% of the total vibration time.
The second case is then considered, where the contact-holder speed is maintained after impact. In the interval between two successive impacts, motion of the contact-holder increases the spring compression. This reduces the amplitude of the rebound but increases the speed before impact, and motion of the contact after impact is described by Eq (13). The solution to this equation is given by expression (14) and typical displacement curves are plotted in Figure 3. The total time of vibration may be determined from Eqs (16), (17), (18) and (19). Graphs of the duration of vibration are plotted in Figures 4 and 5. It will be noticed that as the initial spring compression is reduced the vibration time first increases and then remains practically constant. The graphs show that sometimes the vibration time may be reduced by reducing the initial compression and increasing the rigidity of the

Calculations of Contact Bounce

contacts because other kinds can be reduced in various ways. Calculation of the vibration time is very difficult and a number of simplifying assumptions are made. In particular, to simplify the analysis two extreme cases are considered: the speed of the contact holder becomes zero on impact; the speed of the contact-holder is not altered on impact. In most types of equipment, such as contactors and relays, the second case is the more probable.

A diagram of an equivalent contact system is given in Figure 1. Inertia of the contact spring is either neglected or added to that of the ball that represents the moving contact.

The case in which the contact-holder is arrested is first considered; motion of the contact after impact is then described by Eq (1). The solution to this equation is expressed in the form of Eq (2), and typical rebound graphs for this case are plotted in Figure 2. Expression are then derived for the vibration time of the contacts and the total time after a number of rebounds is given by expression (9).

SOV/144-59-2-14/19

AUTHOR: Mogilevskiy, G.V., Senior Lecturer,

TITLE: Calculations of Contact Bounce

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 2, pp 111 - 117 (USSR)

ABSTRACT: It is important to be able to calculate the vibration of new designs of contact. The vibration may be assessed in terms of the amplitude of the first rebound or of the time interval between the first and last contacts or of the total time for which the contacts are separated. This latter characteristic is the best as it corresponds to the total time for which the arc burns and this is the main cause of contact damage.
The vibration time may be determined experimentally with an oscillograph or certain special instruments. The duration of vibration deperds on many factors, including the current value, for if the current is high the material is softened and the rebound is reduced. It is therefore best to make the calculations or measurements without current in the circuit or with a small current. The only type of vibration considered is the bounce caused by impact between the

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SOV/144-58-10-13/17

The Design of the Short Circuited Turn on Electro-Magnets with Voltage Coil

screen design is given in an appendix. There are 8 figures and 6 Soviet references.

ASSOCIATION: Kafedra Elektricheskikh Apparatov Khar'kovskogo Politekhnicheskogo Instituta (Chair of Electrical Apparatus, Khar'kov Polytechnical Institute) (Lyubchik, Mogilevskiy) Khar'kovskiy elektromekhanicheskiy zavod (Khar'kov Electromechanical Plant) (Khmel'nitskiy)

SUBMITTED: 31st October, 1958

Card 6/6

The Design of the Short Circuited Turn on Electro-Magnets with Voltage Coil

magnetic system has three legs, the short circuited turns are usually installed on the outer legs for better cooling, though this gives some difficulties in making secure fixings, because the outer legs are smaller in cross-section than the central ones. Various methods of fixing the screen in the slot are illustrated in Fig 5. When the equipment is required to have a very long life the screens may be a weak link, the main cause of failure being fatigue stresses caused by repeated impact of the magnetic system. To increase the mechanical strength of the screen, besides using strong materials of adequate size it is advisable firmly to secure overhanging parts of the screen and recommended procedures are illustrated in Fig 6 and briefly described. Spring dampers are sometimes used to reduce impact shocks, see Fig 7. Sometimes arrangements are made to fit the screen at a place which is not subject to impact shocks, see Fig 8. A numerical example of

The Design of the Short Circuited Turn on Electro-Magnets with Voltage Coil

rise at any point in the turn including the maximum temperature rise. In practice the part of the turn that is not in steel may be made of increased section to reduce the temperature rise, in this case the design procedure is the same but certain correction factors are introduced. When using the procedure for the thermal design of short circuited turns it is necessary to know the appropriate heat transfer coefficients and appropriate values are recommended for particular cases. Further problems in the design of short circuited turns in magnetic systems concern the material and shape of the turn, its location in the magnetic system and the method of fixing it to the pole. If the system only works occasionally and without shock the ring may be made up of sheet and may be made removable, see Fig 3a. If there are considerable shocks the ring must be firmly fixed in the slot. Proposed methods of fixing are described and illustrated in Fig 3b and c. In equipment where the coil is permanently fixed the screens may be used as a fixing device as shown in Fig 4. When the

The Design of the Short Circuited Turn on Electro-Magnets with Voltage Coil

temperature rise of the ring can be 200 to 250°C. Unless care is taken the heat generated in the ring may damage neighbouring insulation. Practical methods of constructing the short circuited turns on magnetic systems may be classified into two kinds as illustrated in Fig 1; in one case the screen is located in a slot in the steel and in the other case part of the ring is in air round the outside of the steel. In considering the temperature distribution in the ring it is convenient to consider separately the parts that are in contact with steel only and those that are in contact with air as well. A graph representing the temperature distribution in the short circuited turn is shown in Fig 2 and formulae for the temperature rises in the two sections are given in Eq (12). Actual values of temperature rise are somewhat less in air and higher in steel than the values given by Eq (12) and the extent of the error is next determined. As a result Eq (15) are derived that can be used to determine the temperature

The Design of the Short Circuited Turn on Electro-Magnets with Voltage Coil

respectively. The formulae are valid provided that the iron in the magnetic system is not saturated but because of the screening action of the short circuited turn the magnetic induction in the unscreened part of the pole is considerably increased. This effect may be big enough to make the formulae inapplicable. However, it is shown that with an E-shaped core the short circuited turns are usually placed on the outer poles and because of the phase displacement between fluxes the instant at which the force on the outer poles is a minimum does not coincide with that at which the force in the middle pole is zero, therefore, the minimum force is greater than it otherwise would be and specially accurate analytical calculation of it is not necessary. Experimental verification of the electrical design of a short circuited turn on a relay type RE-2100 showed that the calculation was sufficiently accurate. In order for the magnetic system to work well, allowance must be made for change in the resistance of the ring due to heating, which is very necessary as in some cases the

SOV/144-58-10-13/17

AUTHORS: Lyubchik, M.A., Lecturer; Mogilevskiy, G.V., Candidate of Technical Sciences and Khmel'nitskiy, R.S., Engineer

TITLE: The Design of the Short Circuited Turn on Electro-Magnets with Voltage Coil (Proyektirovaniye korotkozamknutogo vitka elektromagnitov s katushkoy napryazheniya)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, 1958, Nr 10, pp 135-145 (USSR)

ABSTRACT: In single-phase a.c. electro-magnets short circuited turns are located on the ends of the poles of a magnetic system, as shown in Fig 1, to reduce variations in the tractive force. Because the turn is there the variable force that acts on the armature is always more than a certain minimum value which, to avoid vibration should always be greater than the combined forces due to the spring and the weight of the armature. Electrical design of the short circuited turn consists in determining its active resistance and the power loss in it. Previously published design procedures are briefly reviewed. Eq (6) and (7) are then derived for calculation of the turn resistance and power loss

Card 1/6

MOGILEVSKIY, G.V., inzhener-geolog.

Sampling from workings at the Magnitogorsk mine. Gor. shur. no.5:32-35 My '57. (MLRA 10:6)

1. Gornoye upravleniye Magnitogorskogo metallurgicheskogo kombinata.
(Magnitogorsk--Iron mines and mining)
(Ores--Sampling and estimation)

MOSILEVSKIY, G.V., kand. tekhn. nauk.

Calculation of electromagnets with external rotary armatures.
Elektrichestvo no.12:40-43 D '56. (MIRA 11:3)

1. Khar'kovskiy politekhnicheskiy institut im. Lenina.
(Electromagnets)

MOGILEVSKIY, G.F., inzh.; TARNOPOL'SKIY, M.D., inzh.

Construction of the covering of the machine room of a thermal electric power plant. Elek. sta. 35 no.5:28-32 My '64.
(MIRA 17:8)

PROKOF'YEVA, A.P., inzh.; MOGILEVSKIY, G.F., inzh.

Experience in using natural gas in hot-air blowing systems for heating the main structure of a thermal electric power plant during its starting cycle. Elek.sta. 34 no.2:79-81 F '63.
(MIRA 16:4)

(Electric power plants—Heating and ventilation)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

IVANOV, M.V.; MOGILEVSKIY, G.A.; SLAVNINA, G.P.

Symposium on petroleum microbiology, Czechoslovakia, Brno, Oct. 4-9, 1964. Izv. AN SSSR. Ser. biol. no.5:799-803 S-O '65. (MIRA 18:9)

ALEKSEYEV, F.A., prof., red.; MOGILEVSKIY, G.A., kand. geol.-miner. nauk, red.; FEDOROVA, L.N., ved. red.

[Direct methods for prospecting for oil and gas] Priamye metody poiskov nefti i gaza. Moskva, Nedra, 1964. 129 p. (MIRA 17:12)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

MOGILEVSKIY, G. A.

"Analysis of the results of the employment of gas-biochemical methods in searching for oil and gas under various geological conditions."

report scheduled to be presented at the Intl Symp on Microbiology of Crude Oil, Brno, 5-7 Oct 64.

Study of the nature of gas and bacteria anomalies according to drilling and gas logging data. Analele [redacted]
14 no.2:46-68[1] Ap-Je '60.

48 Ap '62.

28 no.4:45-
(MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut yadernoy geofiziki i geokhimii.

(Gas well logging)

MOGILEVSKIY, G.A.

Characteristics of the distribution of natural gases and micro-organisms in the zone of gas and oil fields. Trudy Inst.mikrobiol. no.9:46-56 '61. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut (VNIGNI), Moskva.
(Gas, Natural—Microbiology)
(Petroleum—Microbiology)

sions, were eliminated by taking the mean conductivity of two measurements with fully conducting and fully insulated walls of the electrolytic tank. 6 figures. 5 references. [Abstracter's note: Complete translation]

Card 2/2

S/194/61/000/007/008/079
D201/D305

AUTHORS: Vasil'yev, V.G., Vlasov, F.M. and Mogilevskiy, G.V.

TITLE: The evaluation of the magnetic conductivity of the cylinder - rectangular parallelepiped system with the aid of an electrolytic bath

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 7, 1961, 7, abstract 7 B38 (Tr. Khar'kovsk. politekhn. in-ta, 1960, 30, no. 1, 41-48)

TEXT: Graphs are given for evaluating magnetic conductivity between a rectangular parallelepiped and a cylinder at given geometrical dimensions. The graphs were taken using an electrolytic tank with internal dimensions 45 x 80 cm. The magnetic conductivity was determined from the measurements of an electric conductivity parallelepiped between two electrodes, a cylinder and a rectangular parallelepiped with an a.c. potential being applied to the electrodes. The errors due to the field distortion in the tank of finite dimen-

Card 1/2

NOGILEVSKIY, G.A.

Using the gas logging prospecting method. Sov. geol. 3 no.6:119-128 Je '60. (MIRA 13:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.
(Oil well logging)

MOGILEVSKIY, G.A.; CHERKINSKAYA, B.S.

Composition of dissolved and sorption natural gases in connection with structural position of test wells. Trudy VNIGNI no.17:253-258 '59. (MIRA 13:1)

(Gas, Natural--Geology)

use of radiometric and geochemical methods of oil and gas prospecting in Rumania. A report by L. Stegen, (Hungary), was read on gas-surveying works; S.Yarani on the problem of the adaption of oxidizing hydrocarbon bacteria to low temperatures. Geochemical, microbiological and radiometrical methods to be employed in the individual districts of the USSR were approved at the meeting. These methods must be used in complex ways, especially in Siberia, Central Asia and the other new prospecting areas in conformity with their concrete geological conditions. It was suggested that a permanent acting interdepartmental scientific and methodical council be set up within the setup of AS USSR for all relevant theoretical and practical questions.

1. Geophysical prospecting--USSR

gas-analytical methods and devices (low-temperature, chromatographic and others). The experience in gas surveying in the USSR was commented on by B.P. Yasenev', Yu.M. Yurovskiy spoke on gas core sampling by electrical means. Several reports were concerned with gas surveying and geochemical prospecting methods in individual Soviet regions: the Timano-Pechora gas and oil province, the Saratov oil region, the gas deposits of Stavropol' and on the Kola Peninsula. A.A. Geodekyan and G.A. Mogilevskiy spoke on foreign gas and oil prospecting research and the geochemical and micro-biological methods employed in the US. Professor W. Schwarz (Shvarts), East Germany reported on experimental work on the basis of the microbiological method of oil and gas prospecting. Professor A. Luchter (Lyukhter), (Poland), related positive results of the application of the microbiological method in Poland. Yu. Yuranek, (CSR), reported on gas-surveying, bituminological and microbiological work in the CSR and relevant studies conducted by the Institut neftyanykh issledovaniy, Brno (Oil Research Institute in Brno) on the design of highly sensitive analytical apparatus for the determination of hydrocarbon gases. Professor S. Rasheyev, (Rumania), reported on new designs of an analytical apparatus for geochemical prospecting. D. Bishir and I. Kostesku reported on the experience of the

tion and the ensuing general problems of prospecting by geochemical methods; Professor V.A. Sokolov was concerned with the migration of the hydrocarbons and the formation of gaseous, gasobiochemical and other anomalies and the principles of the geochemical methods of prospecting for and discovering gas and oil; Professor S.I. Kuznetsov spoke on problems concerning microbiological methods in prospecting for oil and gas deposits; the radiometrical prospecting methods for oil and gas applied comparatively recently in the USSR were explained by Professor F.A. Alekseyev; Professor Silin-Bekchurin considered problems of the motion of deep subsoil waters; Professor A.B. Ronov spoke on problems of organic carbon in the sedimentation rocks of the Russian platform in connection with oil and gas prospecting. Several papers dealt with problems of the methods, technical aspects and apparatus required in this prospecting: the nature of gasobacterial anomalies and a rational method of their phenomena, hydrochemical investigations at oil prospecting, soil and geochemical indications of oil and gas existence, the luminescent method of studying and discovering gas and oil deposits, the geochemical zonality of subsoil waters and their importance with respect to oil occurrence, chromatographic methods of gas analysis,

Card 2/4

AUTHOR: Mogilevskiy, G.A., Candidate of Geological and Mineralogical Sciences (Moscow) SOV-26-58-9-24/42

TITLE: Geochemical Oil and Gas Prospecting Methods (Geokhimicheskiye metody poiskov nefti i gaza)

PERIODICAL: Priroda, 1958, Nr 9, pp 107-108 (USSR)

ABSTRACT: The Presidium of the AS USSR has studied and approved the results of the geochemical meeting in Moscow on the initiative of the AS USSR and the Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR (State Scientific-Technical Committee of the USSR Council of Ministers. The meeting was prompted by the resolution of the XX CP Congress to increase Soviet oil production from 350 to 400 million tons and gas production from 270 to 320 million cubic m a year within the next 15 years. The extension of natural gas sources is of special importance in this connection. Here geochemical methods may be useful in addition to the geophysical and structural-drilling prospecting. A total of 27 papers were presented, 7 by foreign scientists. Academician D.I. Shcherbakov opened the meeting and outlined the problems and achievements. A.A. Saukov, Member Correspondent of the AS USSR delivered a paper on the character of the element migra-

Card 1/4

NOGILEVSKIY, G.A.

Combined gas and biochemical surveying methods in prospecting for oil and gas pools. Sov.geol. 1 no.11:111-130 N '58.
(MIRA 12:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy neftyanoy geologorazvedochnyy institut.
(Oil field brines--Analysis) (Geochemical prospecting)

SOKOLOV, V.A., otv.red.; SAUKOV, A.A., red.; OVCHINNIKOV, I.M., red.; KUZNETSOV, S.I., prof., red.; ALEKSEYEV, F.A., prof., red.; GEODEKYAN, A.A., kand.geol.-mineralog.nauk, red.; MOGILEVSKIY, G.A., kand. geologo-mineralog.nauk, red.

[Geochemical methods of oil and gas prospecting; studies of the conference on geochemical methods] Geokhimicheskie metody poiskov neftianykh i gazovykh mestorozhdenii; trudy soveshchaniia po geokhimicheskim metodam, Moskva, aprel' 1958 g. (MIRA 12:12)

1. Akademiya nauk SSSR. Institut geologii i razrabotki goryuchikh iskopayemykh. 2. Chlen-korrespondent AN SSSR (for Saukov).
(Geochemical prospecting) (Oil fields) (Gas, Natural)

MOGILEVSKIY, G. A.

A.L. Geodekyan and G.A. Mogilevskiy gave a survey on "Research work in the field of geochemical methods carried out abroad."

Report presented at a Conference in the Dept. of Geological and Geographical Sci., on Geochemical and Radiometrical Methods of Search and Prospecting for Deposits, 21-26 April 1958.
(Vest. Ak Nauk SSSR, 1958, No. 7, pp. 125-26)

MOGILEVSKIY, G. A.

"The present state of the problem concerning the bacteriological anomalies of gas"

report presented at a Conference in the Dept. of Geological and Geographical Sci., on Geochemical and Radiometrical Methods of Search and Prospecting for Deposits, 21-26 April 1958.
(Vest. Ak Nauk SSSR, 1958, No. 7, pp. 125-26)

MOGILEVSKIY, G.A., kandidat geologo-mineralogicheskikh nauk.

[redacted] in connection with prospecting for oil and gas.
Priroda 46 no.9:98-102 S '57. (MLRA 10:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut, Moskva.
(Bacteria) (Petroleum geology)

MOGILEVSKIY, G.A.

AID P - 1110

Subject : USSR/Mining

Card 1/1 Pub. 78 - 21/21

Author : Subbota, M. I.

Title : Review of G. A. Mogilevskiy's book Microbiological Method of Investigation of Gas and Oil Deposits

Periodical : Neft. khoz., v. 32, #10, 94-96, O 1954

Abstract : The reviewer points out the significance of the book as the only publication since 1937 describing the application of the microbiological method coordinated with other geological methods of surveying, such as the hydrochemical and water-gaseous methods.

Institution : BTEI TsIMTneft (Bureau of Theoretical and Experimental Information. - Central Scientific Research Institute for Mechanization and Labor in the Petroleum Industry)

Submitted : No date

MOGILEVSKIY G.A.

KARTSEV, A.A.; TABASARANSKIY, Z.A.; SUBBOTA, M.I.; MOGILEVSKIY, G.A.; ABRAMOVICH, M.V., professor, retsenzent; GRISHIN, G.L., retsenzent; KOVALEVA, A.A., redaktor; POLOSINA, A.S., tekhnicheskiy redaktor.

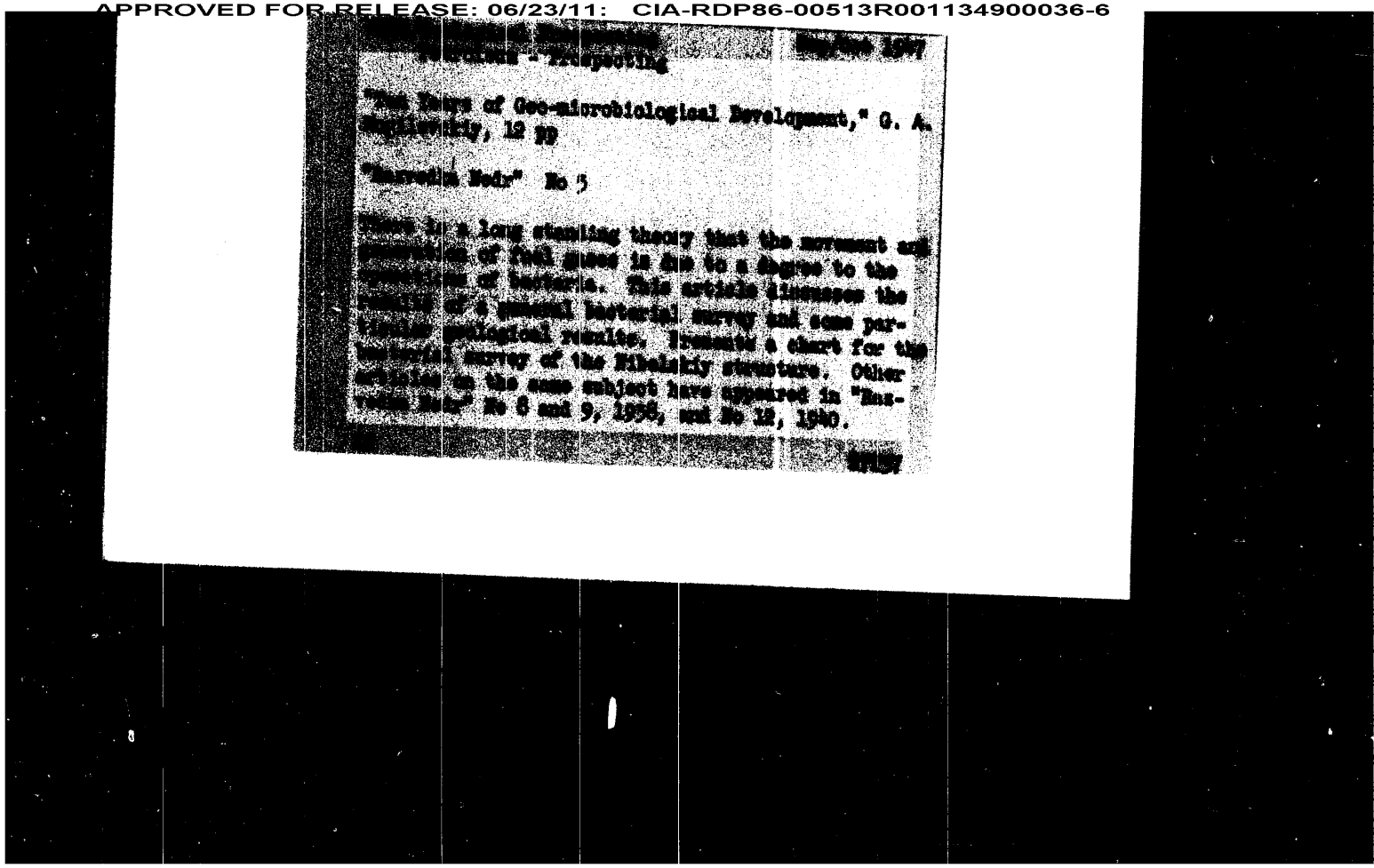
[Geochemical methods of prospecting for oil and gas pools] Geokhimicheskie metody poiskov i razvedki neftianykh i gazovykh mestorozhdenii. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1954. 430 p. (MLRA 7:11)

(Prospecting) (Petroleum--Geology)

VOGILOVSKIY, G. A.

Mikrobiologicheskii metod poiskov nefti i gaza [Microbiological method of prospecting for gas and petroleum deposits]. Moskva, Gostoptekhizdat, 1 p. 96 v.

SO: Monthly List of Russian Accessions, Vol 7, No 8, July 1954.



"Ten Years of Geo-microbiological Development," G. A. Bagdasarskiy, 12 pp

"Neftyanoye Khozyaystvo" No 5

[illegible] a long standing theory that the movement and accumulation of fluid gases in the [illegible] to the activities of bacteria. This article discusses the results of a general bacterial survey and some particular geological results. Presents a chart for the bacterial survey of the Kirkuk structure. Other articles on the same subject have appeared in "Neftyanoye Khozyaystvo" No 6 and 9, 1938, and No 12, 1940.

4. Gas, Natural - Stavropol' Region

7. Results of a bacterial survery conducted in the region of Stavropol' (Caucasus.) Izv.Glav,upr.geol.fon. no. 3. - 1947

Monthly Lists of Russian Accessions, Library of Congress, March, 1953, Unclassified.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

1. MOGILEVSKIY, G. A.

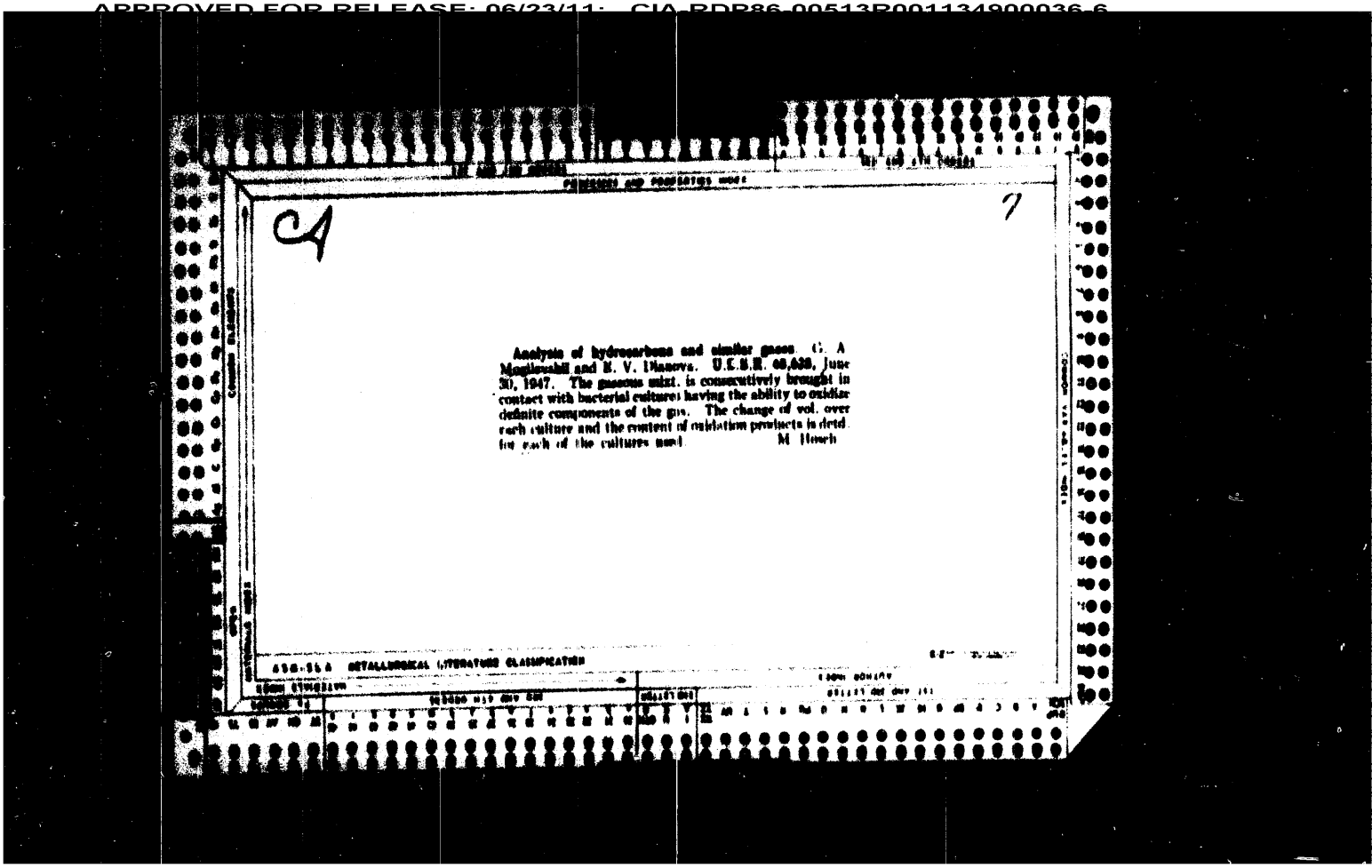
2. USSR (600)

4. Surulovka Uplift - Hydrocarbons

7. Bacterial survey in the area of the Surulovka Uplift (Ul'yanovsk Province). (Abstract) Izv. Glav. upr. geol. fon no. 3, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

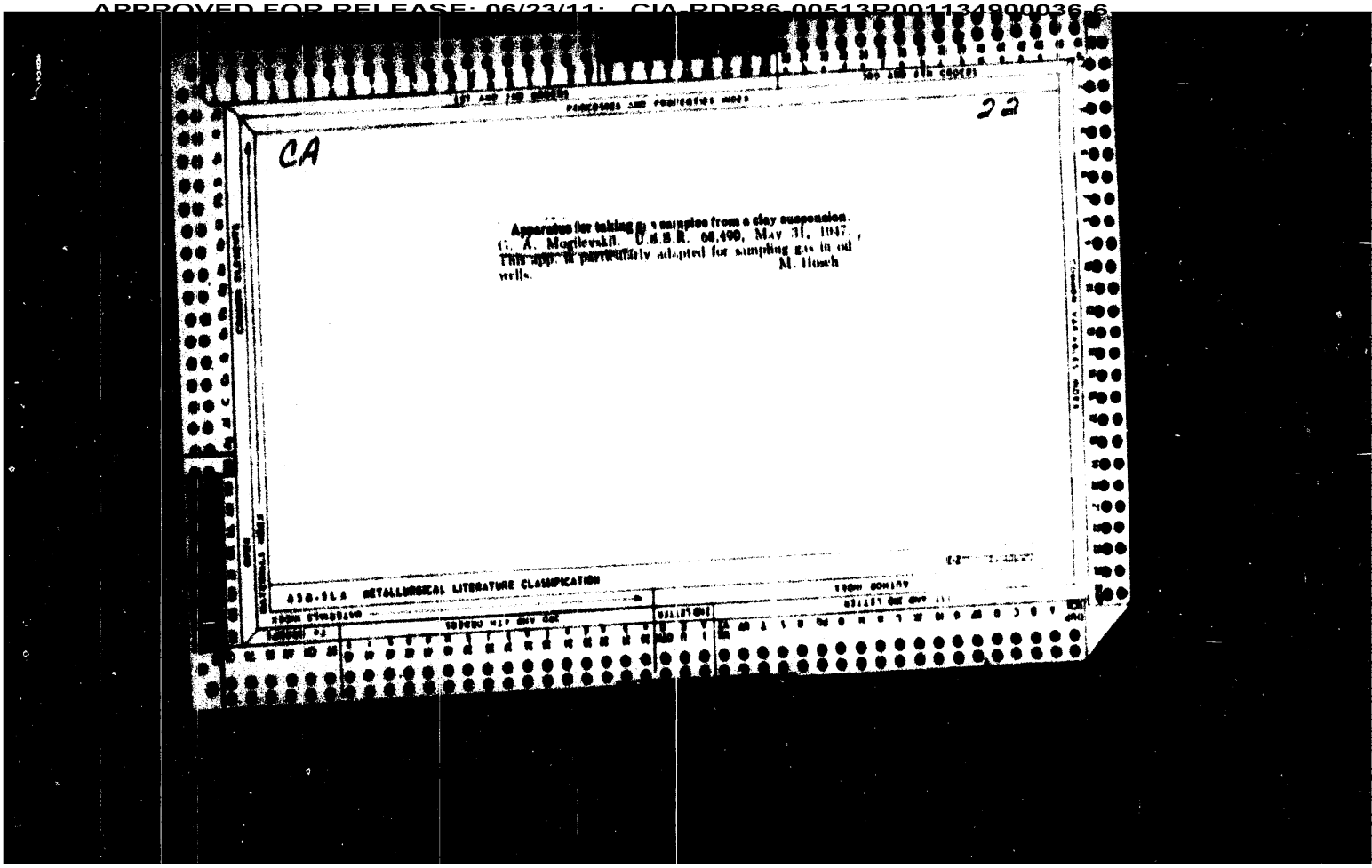


A

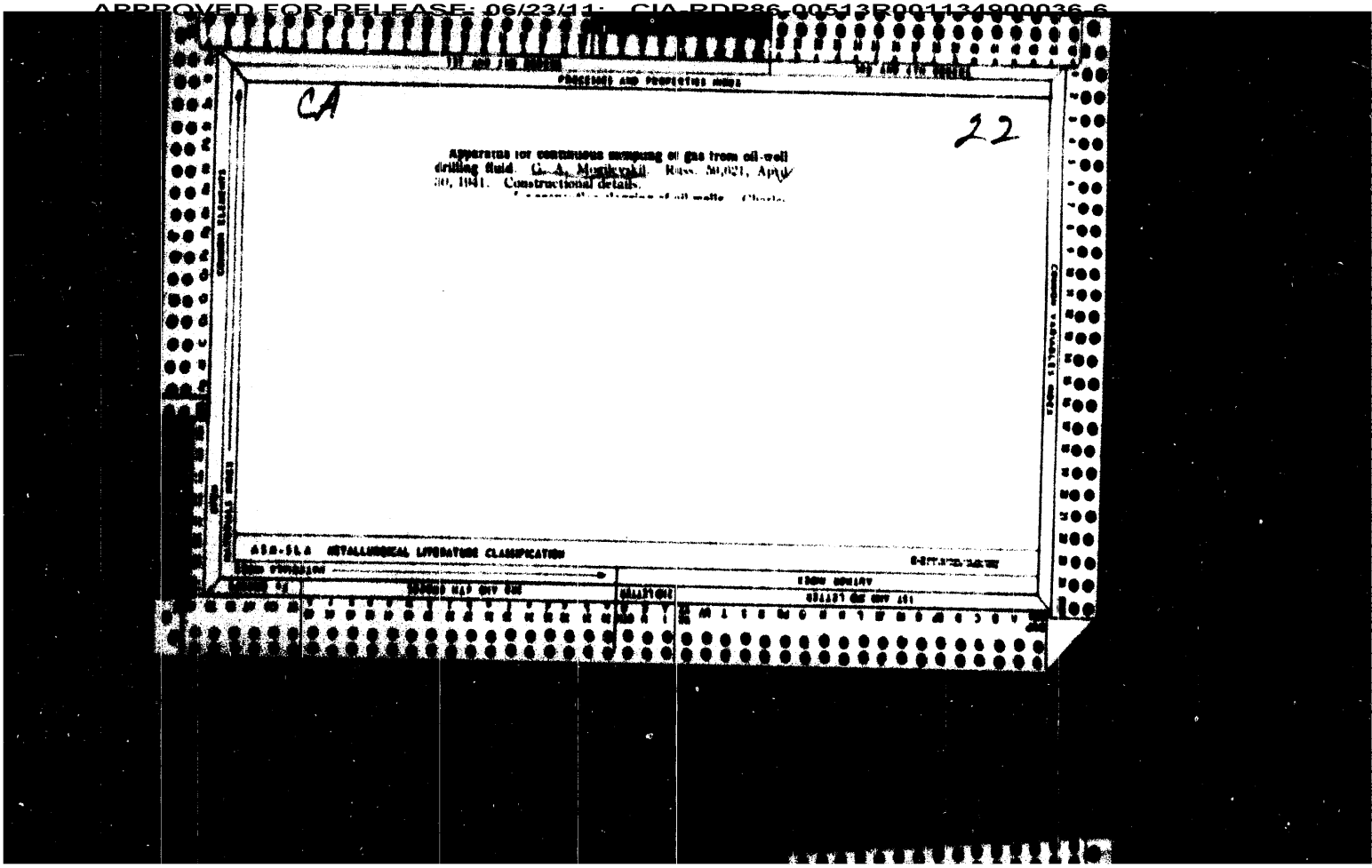
7

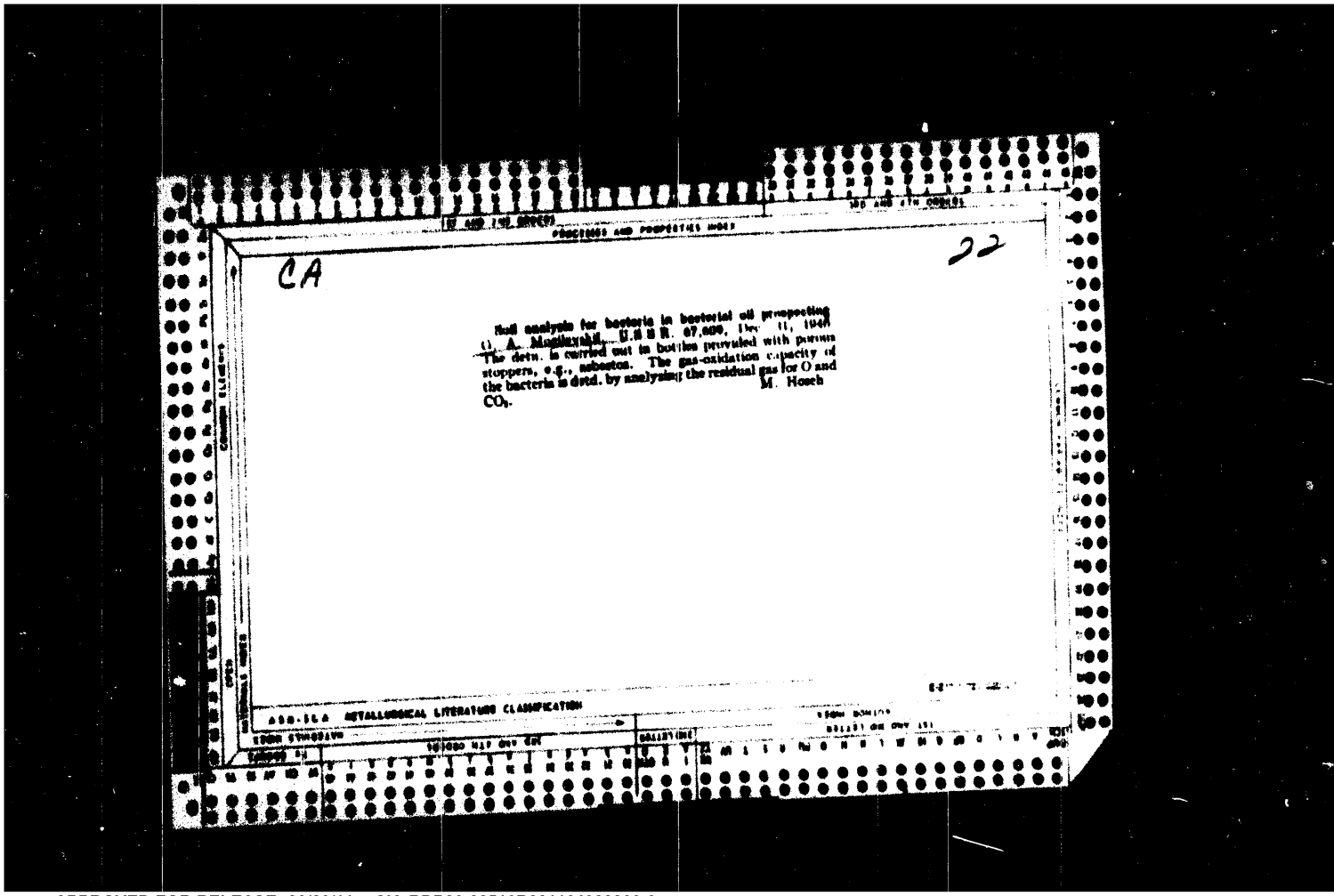
Analysis of hydrocarbons and similar gases. G. A. Magilevskii and M. V. Ilinova. U.S.S.R. 60,630, June 30, 1947. The gaseous mixt. is consecutively brought in contact with bacterial cultures having the ability to oxidize definite components of the gas. The change of vol. over each culture and the content of oxidation products is detd. for each of the cultures used. M. Hoch

656-54A METALLURGICAL LITERATURE CLASSIFICATION



APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6





MOGILEVSKIY, G. A.

126E2R (The bacterial method of prospecting for oil and natural gases) Bakterial'nyi metod razvedki na neft' i prirodnye gazy.
SO: Razvedka Nedr, 10(12): 32-43, 1940

MOGILEVSKII, G. A.

Mogilevskii, G. A. "On the Possibility of Biochemical Transformation of Hydrocarbon Gases in the Zone of Weathering." In the book: Sbornik Rabot po Gazovoi Shemke. Trudy Vsesoiuznoi Kontory (Tresta) Geofizicheskikh Razvedok, Moscow-Leningrad, No. 14, 1939, pp. 68-78.

PROCESSES AND PROPERTIES INDEX

A new field method of gas prospecting. [illegible] Neftyanoe Khoz. 1937, No. 4-5, [illegible].—A detailed description of the operations is presented. Gas samples taken from a depth of 3 m. during various times of the day and particularly during various seasons are not uniform in the concn. of hydrocarbons. The ratio between the light and the heavy fractions of hydrocarbons changes under the influence of geological factors, and depends also on the time interval between the drilling of the well and the sampling. A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

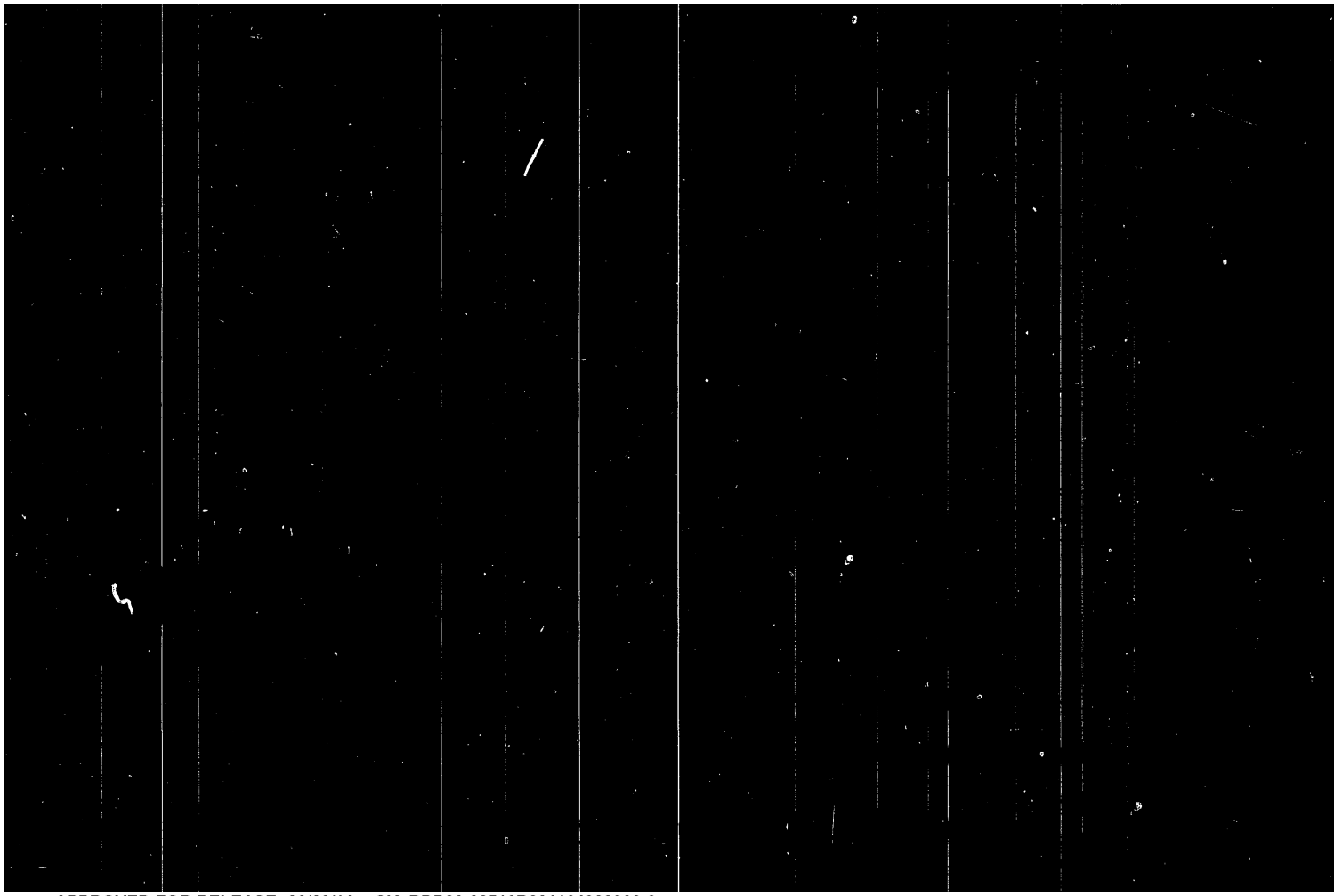
MOGILEVSKIY, M.R., prof.; TSUKERMAN, G.Ya., dotsent; LAPINSKIY, A.A. (Stalingrad)

Rational use of the vectorcardioscope. Klin.med. 37 no.7: 96-97 Jl '59. (MIRA 12:10)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof.M.R.Mogilevskiy) Stalingradskogo meditsinskogo instituta.
(HEART)

[redacted], A. R., AND A. YA. PITEL'

"Antibiotiki i ikh klinicheskoye primeneniye (Antibiotics and Their Clinical Use), 1947



momentum, but also with the orientation of spins. In such a way, the spin interaction can cause a nonequilibrium population in Zeeman sublevels. The probability of collisions with resonance photons is greater than collisions of hydrogen atoms with electrons in the plasma. There is a probability that in active coronal regions a dynamic orientation of atoms exists, caused by resonance dispersion of L_α quanta. Oriented hydrogen atoms are located in the field of continuous radio emission with total polarization, or in maser-like conditions. The radio emission of coronal heterogeneities occurs at an optical depth which eliminates the self-absorption in radio lines. The "Maser" mechanism can probably exist in active regions and type-I radio outbursts may be specific monochromatic radio lines of hydrogen, helium, and other elements of coronal plasma. It is necessary to prove the Maser-like nature of type-I radio outbursts by experiment. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 03/ SUBM DATE: 24Dec65/ ORIG REF: 010/ OTH REF: 005

Card 2/2

AUTHOR: Ivanov-Kholodnyy, G. S. (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR)

TITLE: On the Maser nature of solar radio outbursts of type I

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 5, 1966, 809-814

TOPIC TAGS: solar flare, monochromatic radiation, plasma magnetic field, solar radio emission, Zeeman effect, electron spin, solar plasma, solar physics, maser theory

ABSTRACT: Peculiar properties of type-I solar radio outbursts are: 1) monochromaticity of the 2—4-Mc band, 2) high or total polarization of this radiation, 3) close correlation of radio type-I outbursts with solar activity and increased radio emission in the meter range. The most important property is the monochromaticity by which this type of outbursts differs from other nonequilibrium sporadic solar radio emissions. A nonequilibrium concentration of neutral hydrogen atoms in Zeeman sublevels can occur in the atmosphere of active regions. Spins of free electrons in a magnetic plasma are oriented by the mag-

Card 1/2

UDC: 523.72

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

TITLE: IZMIRAN magnetograph for determination of longitudinal components of magnetic fields of active areas

SOURCE: Ref. zh. Astronomiya, Abs. 8.51.417

REF SOURCE: Sb. Solnechn. aktivnost', No. 2. M., Nauka, 1965, 118-130

TOPIC TAGS: solar magnetic field, spectral line, photomultiplier/IZMIRAN magnetograph

ABSTRACT: A detailed description is given of the IZMIRAN magnetograph determining the longitudinal component of a field. The magnetograph is built according to an original design, which unlike the generally accepted Babcock design, uses only one photomultiplier to make measurements of the magnetic field along both wings of the spectral line. A block diagram and electron diagrams of the magnetograph, as well as formulas for calculation of the working parameters of the diagram and the calibration of the instrument are presented. (See also RZhAstr, 1963, 1.51.383). Bibliography has16 references. [Translation of abstract]

Card 1/1 SUB CODE: 08,09,20/ UDC: 522.417

ACC NR: AR6028758

Bernhard Halle, West Berlin is used), an image of the sun area is utilized which is reflected from the mirror sides of the entrance slit. 5 references. G. Kuklin.

SUB CODE: 03

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

ACC NR: AR6028758 SOURCE CODE: UR/0269/66/000/008/0055/0055

AUTHOR: Mogilevskiy, E. I.; Zhulin, I. A.; Ioshpa, B. A.

TITLE: The IZMIRAN solar tower installation

SOURCE: Ref. zh. Astronomiya, Abs. 6.51.434

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2. M., Nauka, 1965, 108-117

TOPIC TAGS: solar telescope, solar spectrum, spectrographic analysis

TRANSLATION: The ATB-3 IZMIRAN solar tower is described. The mirrors of the coelostat group (D = 440 mm) are mounted on the upper end of a special tube which houses the entire optical assembly. The clock mechanism is controlled by a 3G-11 sound generator through a power amplifier. The main mirror of the telescope has the following parameters: D = 375 mm, F = 17 m; the Cassegrainian reflection is F = 27 m. The telescope is equipped with a complex horizontal spectral assembly which operates as a spectrograph, a spectrometer, a spectroheliograph, and a spectrohelioscope. The spectrograph uses mirrors with F = 10 m; the GOI diffraction grating has 600 lines/mm. The halfwidth of the instrumental profile in the IVth-order is 0.026 A (this is larger than the theoretical value by a factor of 1.4). The installation is equipped with a monochromatic guide. For visual and photographic observations in the Hα line (an IPF by

Card 1/2 UDC: 522.56

L 09105-67
ACC NR: AP7002356

Orig. art. has: 6 figures, 9 formulas and 1 table. [JPRS]

SUB CODE: 04,03 / SUBM DATE: 26Sep64 / ORIG REF: 018 / OTH REF: 014

Card 2/2 nat

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

L 09105-67 EWT(1)/FCC GW

ACC NR: AP7002356 SOURCE CODE: UR/0203/65/005/005/0850/0857

39

AUTHOR: Kuleshova, V. P.; Mogilevskiy, E. I.

ORG: Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR)

TITLE: Energy characteristics of ionospheric disturbances and the nature of geomagnetic and ionospheric disturbance

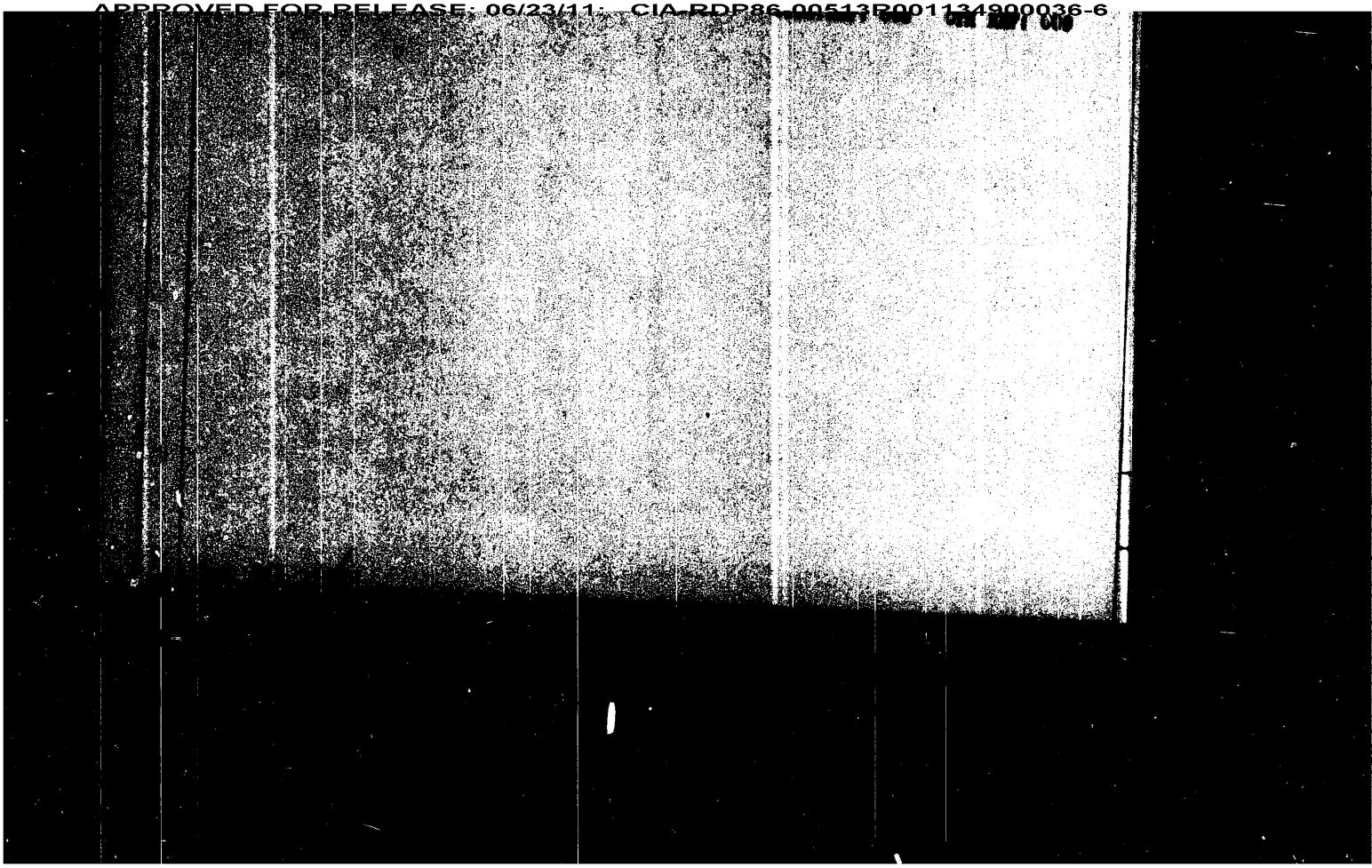
SOURCE: Geomagnetism i aeronomiya, v. 5, no. 5, 1965, 850-857

TOPIC TAGS: geomagnetic disturbance, ionospheric disturbance, magnetic storm, solar corpuscular radiation

ABSTRACT: A comparison has been made between the planetary characteristic of ionospheric disturbance and the energy characteristic E of geomagnetic storm. It is shown that there is a correspondence between the active periods of geomagnetic and ionospheric disturbances, reflecting the structure of the magnetic field of a solar corpuscular stream with a force-free magnetic field. The equation of ionization equilibrium for the entire thickness of the ionosphere is used to determine the relationship between and E. The dependence of change of the temperature of exosphere and ionosphere on E, determined from satellite deceleration, is used. The authors discuss the problem of the transfer of the energy of a disturbance from the magnetosphere to the ionosphere by means of low-frequency hydromagnetic waves which dissipate in the ionosphere.

Card 1/2 UDC: 550.382.2

0925 0652



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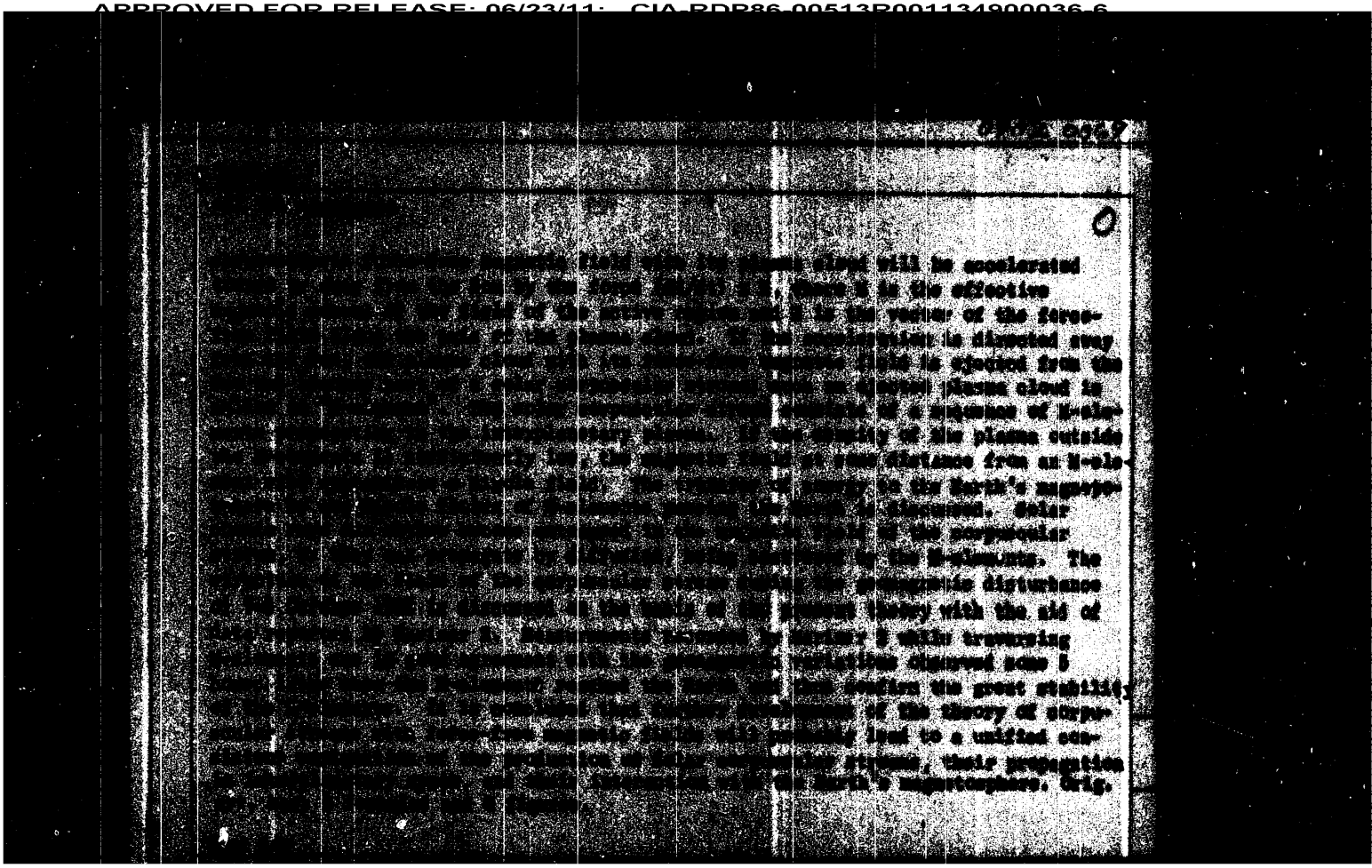
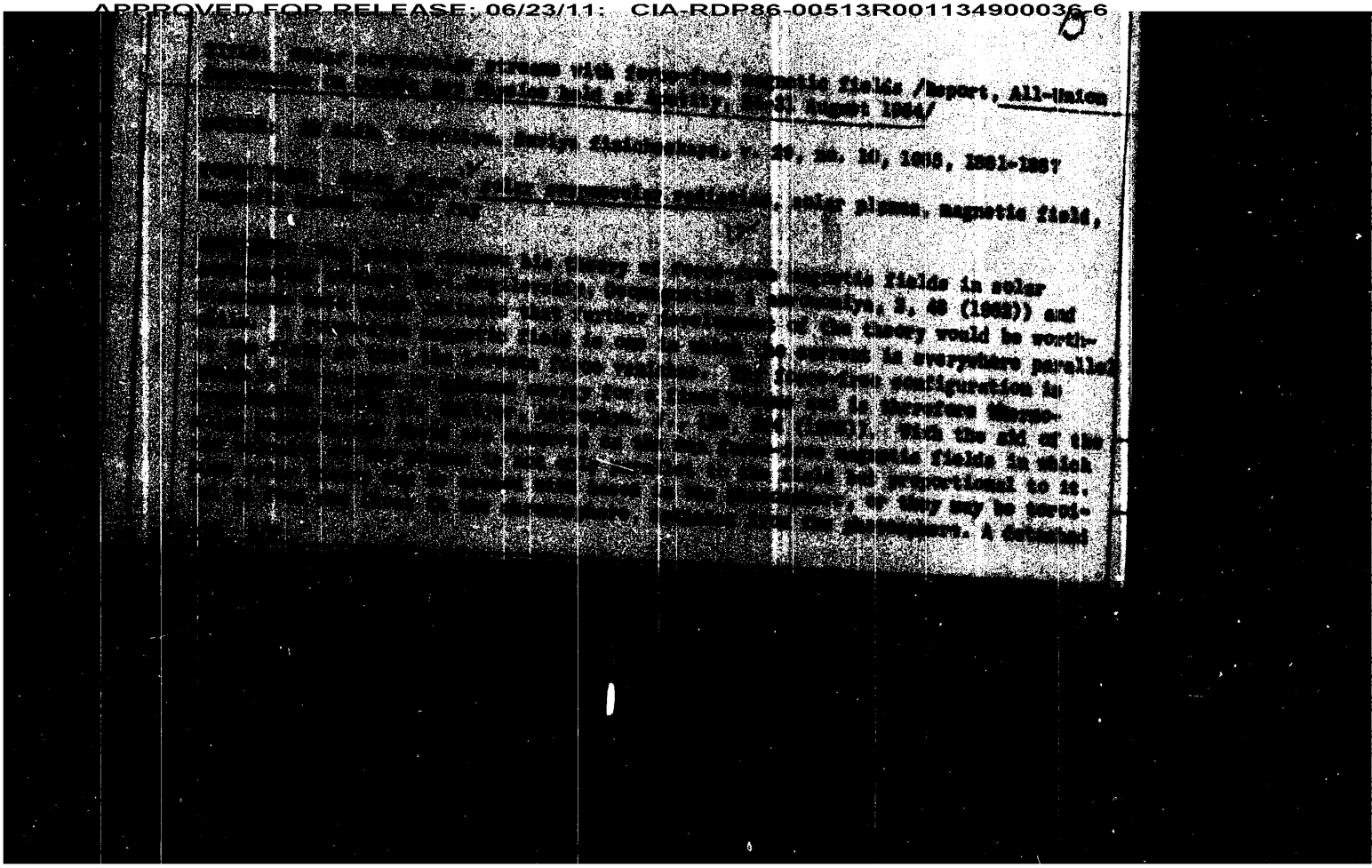




L 38375-66
ACC NR: AT6023730

condition for macroscopic motion if the solar plasma in the chromosphere and corona is compressible. Using this model, the appearance of solar low-energy cosmic rays is possible with the plasma cloud in which the burst and magnetic field were generated retaining injected protons. The geomagnetic disturbance is a consequence of the interaction of the magnetic field of the corpuscular stream with the magnetosphere. This approach to the problem does not require a solar plasma with a frozen magnetic field. Analysis of synoptic maps of the deviation distribution of critical frequencies in the F2 layer from the median value demonstrated the existence of regions with increased and decreased frequencies. Maximum negative deviations occurred in the geomagnetic latitudinal belt of 40—75° and coincided with the beginning of magnetic storms. Negative deviations were located in regions of magnetic anomalies. Positive deviations of critical frequency occur during weak geomagnetic disturbances and depend on the season. They appear in regions of magnetic anomalies. Variations of critical frequency in the F2 layer increase with the geomagnetic latitude, and they attain maximum value in the auroral zone. Orig. art. has: 4 figures. [EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 001/ ATD PRESS: 5042

Card 2/2 MLP

EWT(1)/FCS

ACC NR: AT6023730 SOURCE CODE: UR/2831/65/000/014/0086/0093

AUTHOR: Mogilevskiy, E. I.; Zevakina, R. A.; Lavrova, Ye. V.; Lyakhova, L. N. 63 B+1

ORG: none

TITLE: The nature of time-space distribution of ionospheric disturbances

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. V razdel programmy MGG: Ionosfera. Sbornik statey, no. 14, 1965. Ionosfernyye issledovaniya, 86-93

TOPIC TAGS: ionospheric disturbance, solar wind, F layer, geomagnetic field, solar plasma, critical frequency, solar corpuscular radiation, atmospheric ionization, atmospheric disturbance, ionospheric absorption, synoptic meteorology, map

ABSTRACT: Ionospheric perturbations are associated with solar corpuscular streams and the magnetosphere. An increased disturbance in the F2 layer at high latitudes is connected with additional ionization and structural disruptions of the lower ionosphere. Data obtained from 60 ionospheric stations during the IGY were used in analysis of the spatial distribution of anomalous absorption in the Northern and Southern Hemispheres. Absorption maps have been drawn and compared with solar processes, ionospheric disturbances, and perturbations in the geomagnetic field. Anomalous absorption begins several hours after a type-IV radio burst and covers the polar cap and the auroral zone. During weak absorption, preeminent "shock zones" and quasi-spiral regions are formed allowing direct entry of high-energy solar corpuscles. A corpuscular stream model with a forceless magnetic field was used for ionospheric disturbances. A forceless magnetic field is a necessary

Card 1/2

[illegible] pass the earth either traveling in the opposite direction or overtaking it. When [illegible] corpuscular stream and the earth pass each other in opposite directions, this [illegible] the earth's rotation. In contrast, solar corpuscular [illegible] the earth [illegible] forces which [illegible] the earth's rotation. [illegible] was applied to the earth with its magnetosphere. The [illegible] a formula for computing the acceleration and deceleration of [illegible] when a corpuscular stream passes the earth at selected distances. [illegible] formulas.

[SC]

[illegible] ASSN: [illegible]/ ORIG REF: 000/ OTH REF: 001/ ATD PRESS: 4174

[illegible] SOURCE CODE: [illegible]/000/1098/1099

AUTHOR: [illegible]; [illegible], Yu. D.; Mogilevskiy, E. I.

ORG: [illegible] Propagation of Radio [illegible] magnetizma, ionosfery i rasprostraneniya radio- [illegible]

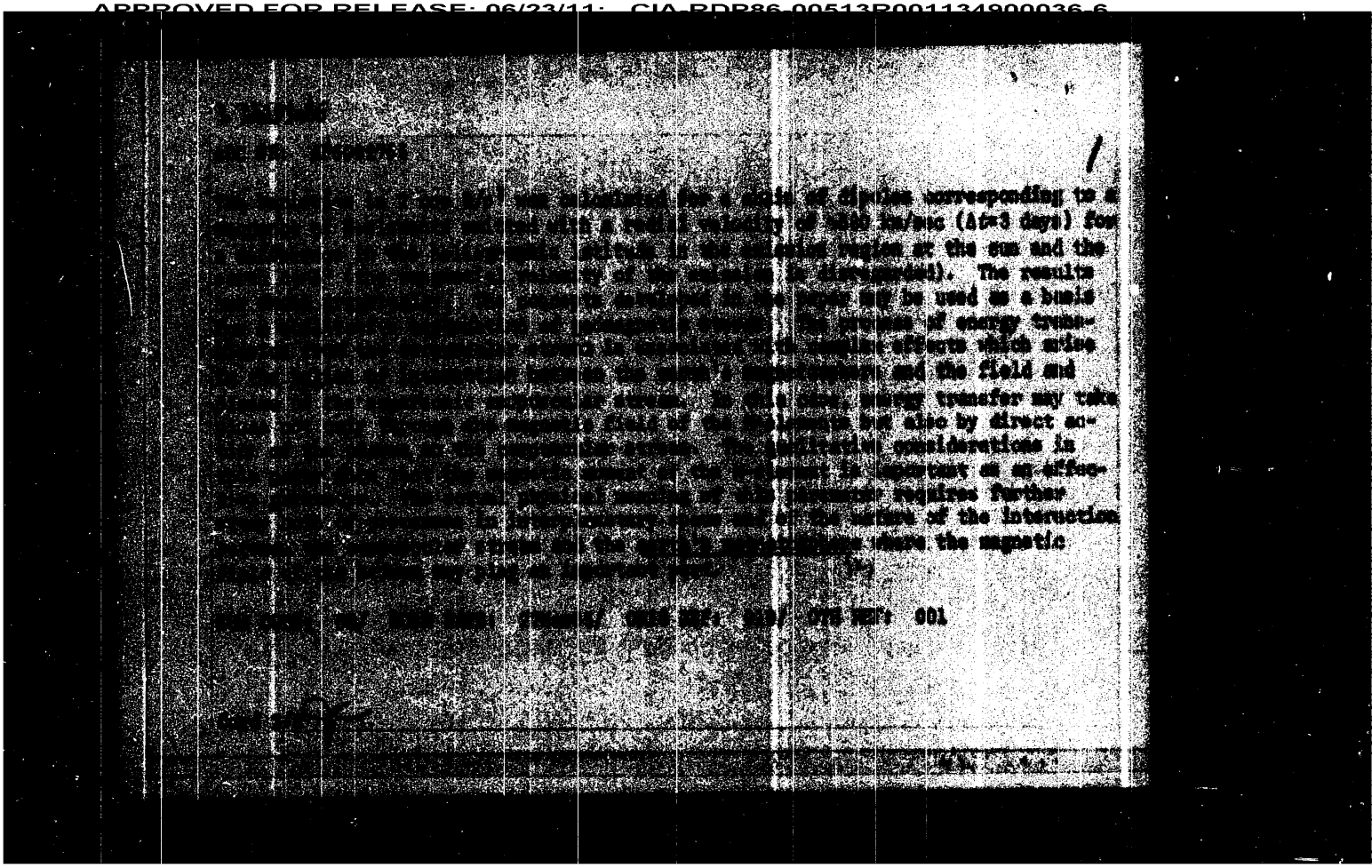
TITLE: [illegible] changes in the velocity of the earth's rotation and possible reasons [illegible]

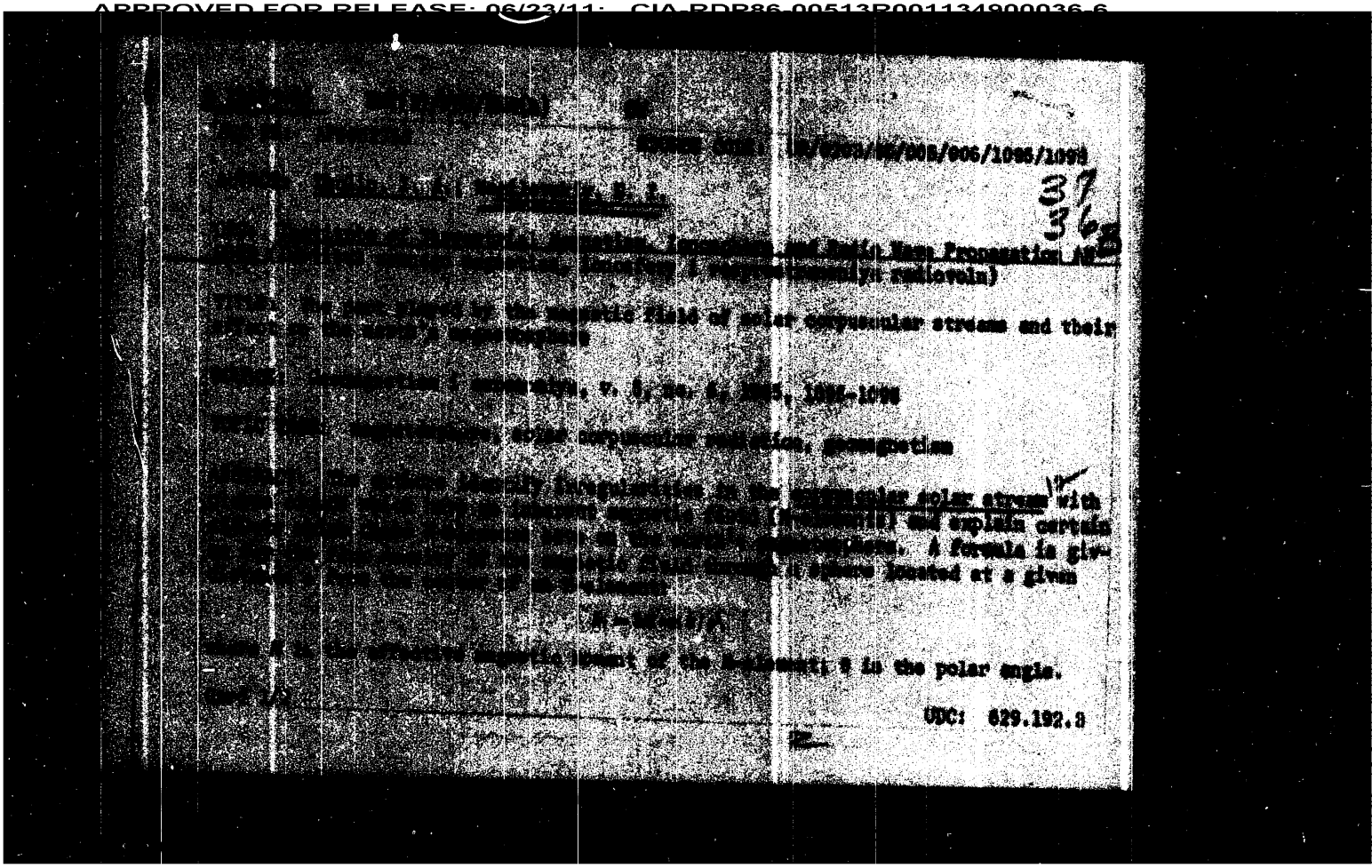
SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 6, 1965, 1098-1099

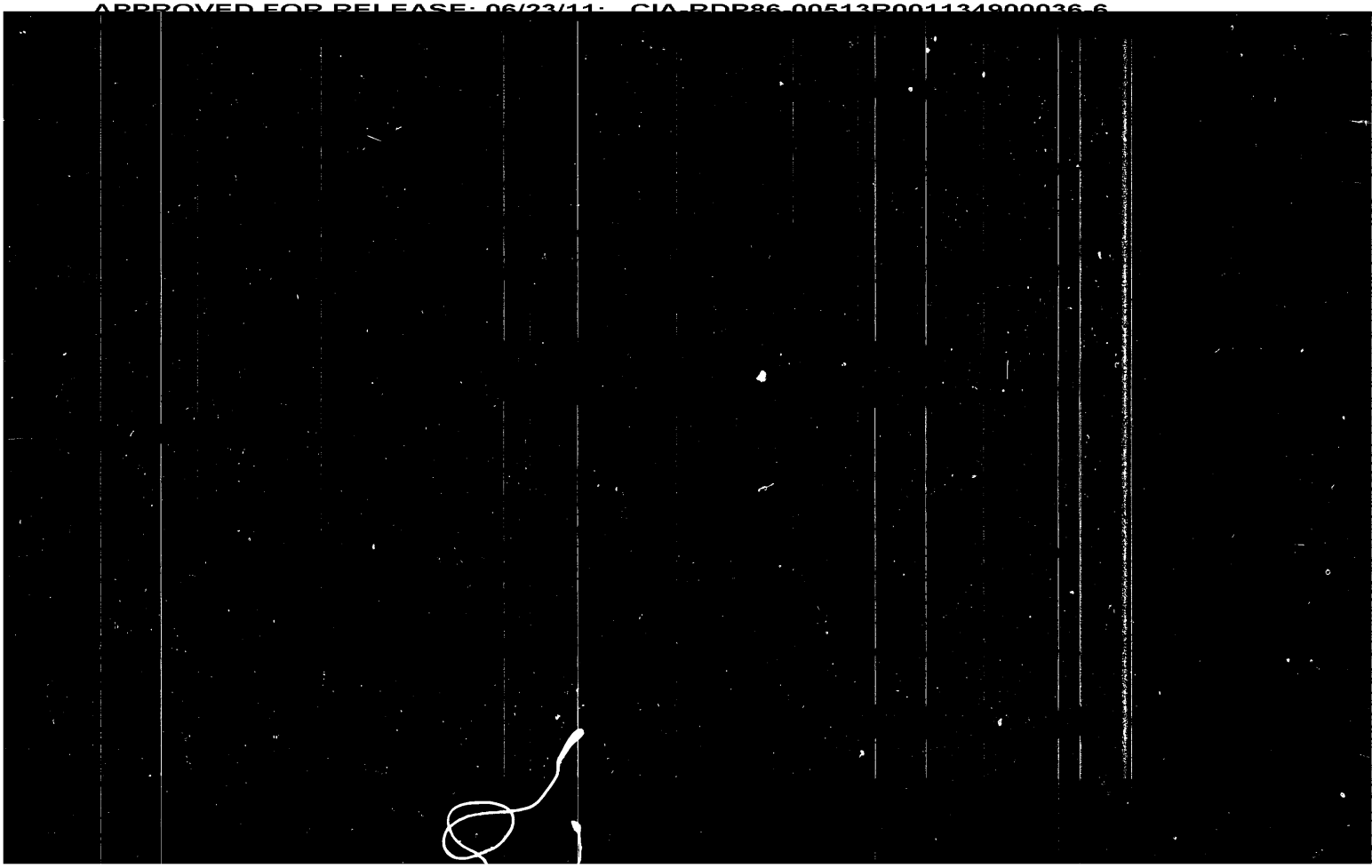
TOPIC TAGS: earth rotation, velocity vector, magnetic field, ~~corpuscular stream,~~ [illegible], solar corpuscular radiation

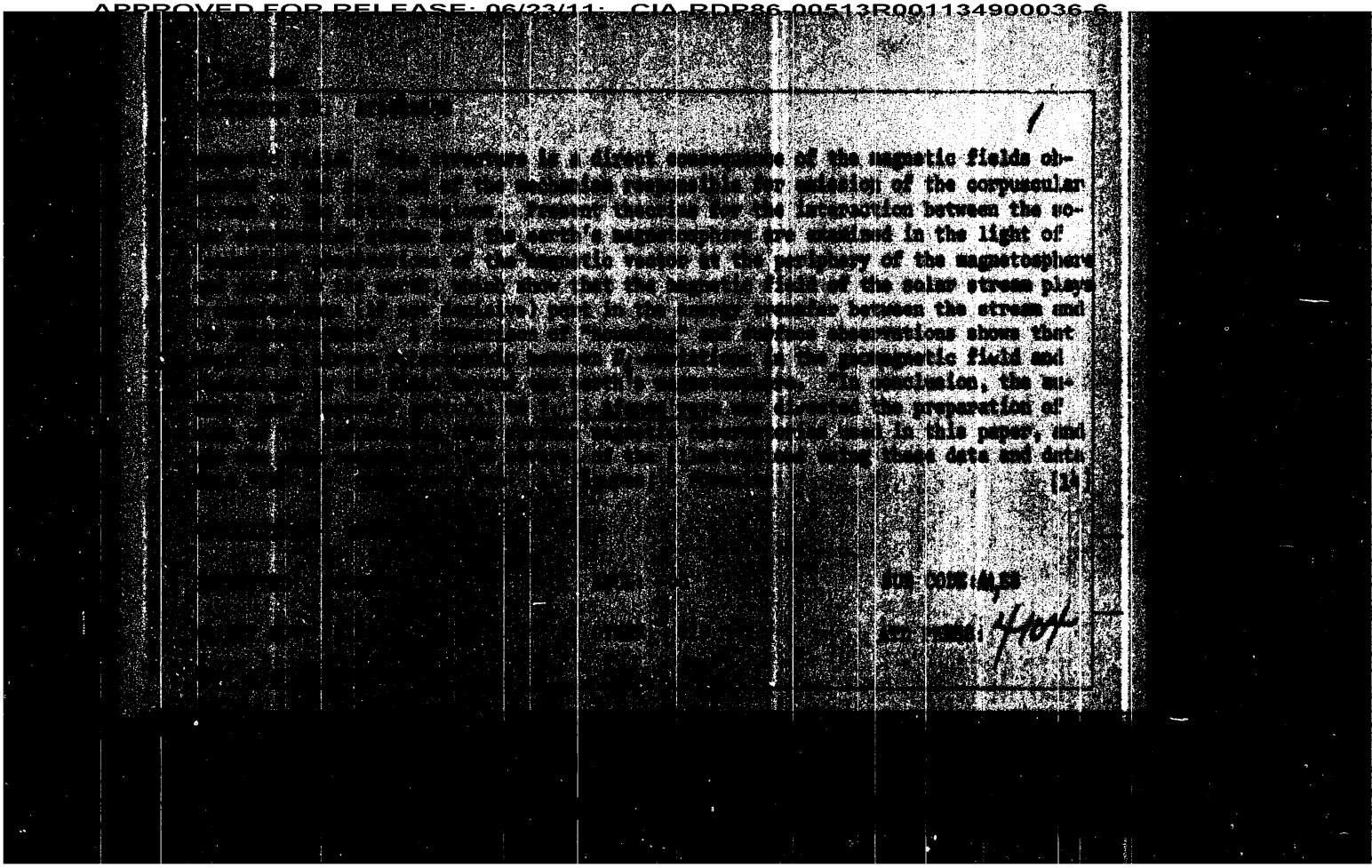
ABSTRACT: Data of the International Time Service on the irregular rotation of the earth is not an accurate enough source for judging the change in rotation [illegible] to day. V. I. Afanas'yeva, Yu. D. Kalinin, and E. I. Mogilevskiy made an attempt to find the real source causing this irregular rotation. They imagined a [illegible] ball hanging on a thread. A magnet moves along this ball horizontally at [illegible]. Its magnetic moment coincides with the velocity vector. The change [illegible] by the moving magnet causes the ball to rotate. The [illegible] of the thread. The direction of the ball's [illegible] upon the side along which the magnet moves. Solar corpuscular

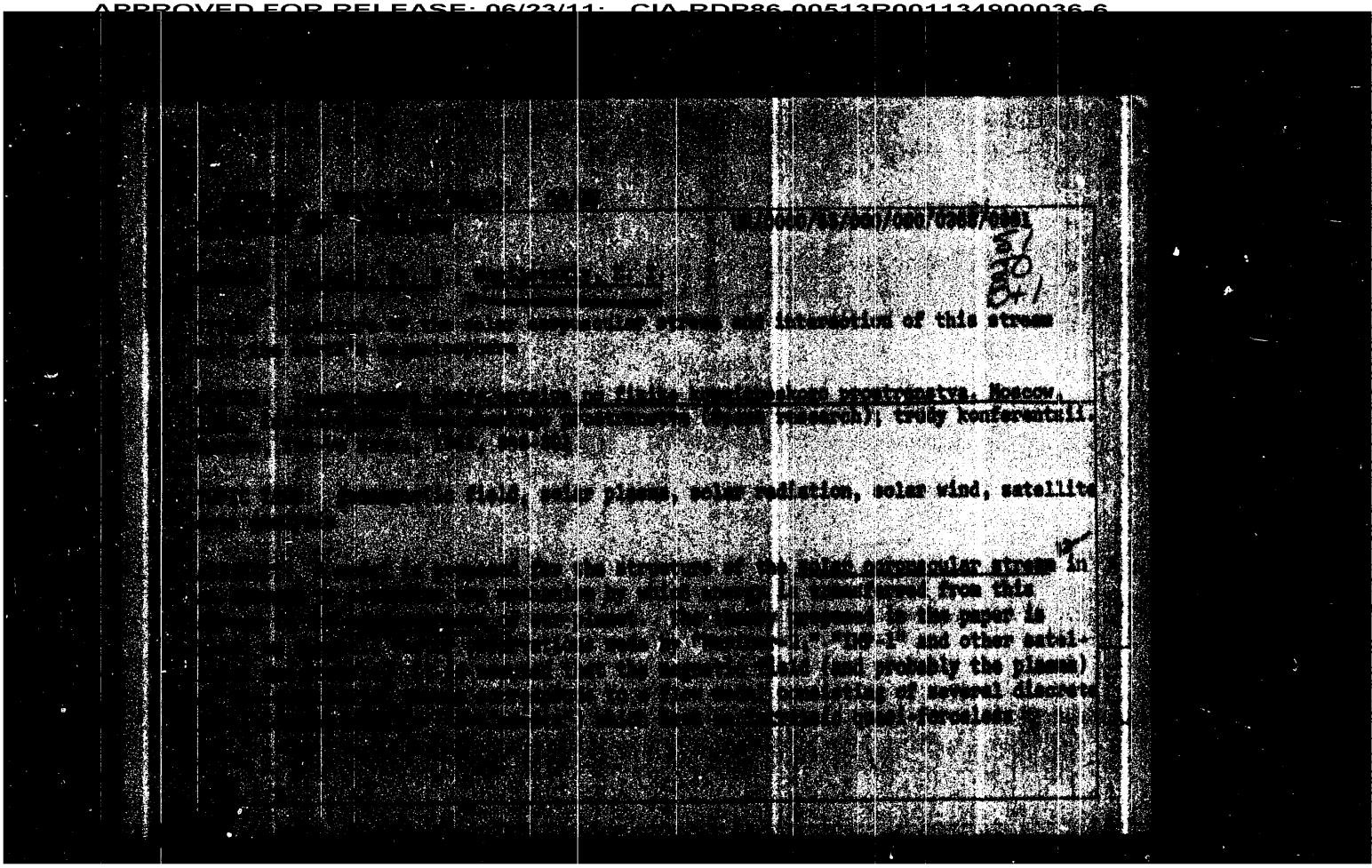
[illegible] UDC: 550.38











ACC NR: AP7013720

were based on the photospheric line of iron λ 5250.2. Magnetograms for 8-10 successive days for January, May, August and October 1958 were used. In order to determine the magnetic flux of local regions of the magnetic field and judging the character of the structure and variability of fields it was necessary to interpret the magnetograms, which is extremely complex, and construct maps of isogausses -- lines of equal values of magnetic field strength. Fig. 1 in the text is an example of such isogauss maps. The complexity of the pattern of distribution of the local magnetic fields in the northern and southern zones of activity makes it difficult to make such an analysis, but on the other hand the problem was facilitated by the availability of very complete data on calcium flocculae. The boundaries of the flocculae virtually coincide with regions where the magnetic field exceeds 5 gauss. It was found that the pattern of changes of the flux in a spot and in an active region is different. This can serve as evidence of the absence of a direct relationship between changes of the magnetic flux of spots and variations of the magnetic flux of the surrounding active region. Orig. art. has: 2 figures and 1 formula.

[JPRS: 34,593]

Card 2/2

ACC NR: AP7013720 SOURCE CODE: UR/0203/65/005/006/1092/1094

AUTHOR: Zhulin, I. A.; Mogilevskiy, E. I.

ORG: Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation, AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR)

TITLE: Variability of the fluxes of magnetic fields of spots and faculae

SOURCE: Geomagnetism i aeronomiya, v. 5, no. 6, 1965, 1092-1094

TOPIC TAGS: solar magnetic field, solar facula, magnetic field measurement, sunspot, magnetic field flux

SUB CODE: 03,20

ABSTRACT: In this paper an attempt is made to determine qualitatively the nondependence of the variability of magnetic fields of spots and adjacent faculae on the basis of some data on local magnetic fields on the sun obtained at Mount Wilson Observatory during the IGY period. The basic data consisted of magnetograms of the longitudinal component of magnetic fields on the sun obtained once a day. The measurements

Card 1/2 UDC: 523.745

0933 2193

MUSTEL', E.R.; MOGILEVSKIY, E.I.

Solar activity and the geoelectric complex of phenomena. Geofiz. biul. no.14:92-95 '64. (MIRA 18:4)

AFANAS'YEVA, V.I.; ZHULIN, I.A.; KALININ, Yu.D.; MOGILEVSKIY, E.I.

Energy of geomagnetic disturbances. Geomag. i aer. 4 no.[illegible] N-D '64. (MIRA 18:1)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

ACCESSION NR: AP4015[illegible]

result of the decay in stability of these waves, the energy of ordered oscillations is converted to the spectrum of turbulent noise and is not observed. The absence of any unique correspondence between densities of kinetic and magnetic energies is an argument against any "wave" interpretation of the data from Mariner II. These data generally contradict the hypothesis of a corpuscular stream with a "frozen" magnetic field. The author concludes that the measurements of Venus I and Pioneer V on the magnetic field in a solar corpuscular stream do not contradict the measurements of Mariner II, but may be interpreted without conflict on the assumption of a corpuscular stream with a weak magnetic field. Orig. art. has: 4 figures, 1 table, and 10 formulas.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery* i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere, and Propagation of Radio Waves AN SSSR)

SUBMITTED: 19Dec63 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: ES NO REF SOV: 012 OTHER: 011

Card 2/2

ACCESSION NR: AP4031624 S/0203/64/004/002/0213/0223

AUTHOR: Mogilevskiy, E. I.

TITLE: The possible structure of the magnetic field of a corpuscular stream affecting the earth as determined by measurements on Mariner II

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 2, 1964, 213-223

TOPIC TAGS: magnetic field, corpuscular stream, Mariner II, magnetosphere, turbulent noise, shock wave

ABSTRACT: The magnetic field was measured on Mariner II by a three-component fluxgate magnetometer having a sensitivity of $\gtrsim 0.7$ gamma. Measurements of the magnetic vector and the parameters of the plasma are important because from them it is possible to determine the three-dimensional structure of the magnetic field of a solar stream affecting the earth. The data are preliminary, but they far surpass the previous data on measurements of the magnetic field in corpuscular streams beyond the limits of the earth's magnetosphere. Collisionless shock waves are unstable and cannot be maintained to any great distance from the sun. As a

Card 1/2

"A Possible Scheme of Transmission of Solar Corpuscular Stream Energy with Force-Free Magnetic Field to the Magnetosphere and Ionosphere of the Earth."

report submitted for Ultra Low Frequency Electromagnetic Fields Symp, Boulder, Colo, 17-20 Aug 64.

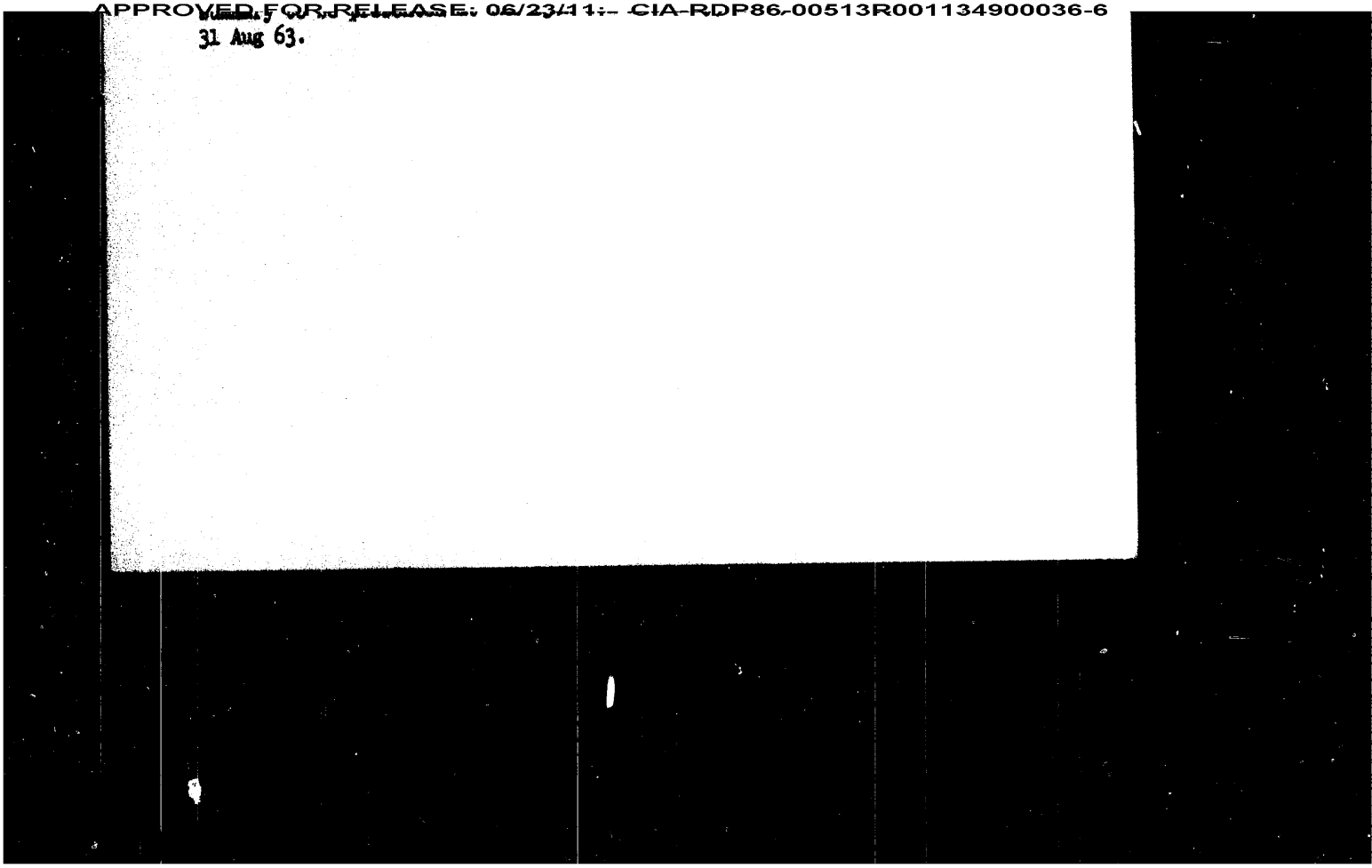
Inst of Terrestrial Magnetism, Ionosphere & Radiowave Propagation, AS USSR

MOGILEVSKIY, N.I.

Effect of the solar corpuscular stream on the earth's magnetosphere. Geomag. i aer. 3 no.6:1001-1013 N-D '63. (MIRA 16:12)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln.

31 Aug 63.



MOSKALENSKIY, M. I.;

"On the structure and nature of the magnetic field of the solar corpuscular stream based on the measurements at "Mariner II". (USSR).

Report submitted for the COSPAR Fifth International Space Science Symposium, Florence, Italy, 8-20 May 1964.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900036-6

Report submitted for the 4th International Space Symposium (COSPAR)
Warsaw, 2-12 June 63

relation between T_z and the z magnitude. This relation is different for various-scale corona irregularities. 3) The macroscopic velocities v_D of the FeX and FeXIV ions are different. 4) The contour of emission lines is not of a pure Doppler origin. The characteristic motion of multicharged z-ions in the coronal plasma is investigated in the presence of weak non-stationary electric fields ($E \gtrsim 10^{-6}$ v/cm) in coronal irregularities. The observed inequality of $T_z > T_e$ and the relation between T_z and z may be satisfactorily explained by the specific acceleration of the z-ions in weak electric fields of active corona regions. During a non-stationary macroscopic plasma motion, weak electric fields sporadically appear in the active corona regions with inhomogeneous magnetic fields. These fields adequately explain the characteristic inequality of $T_z > T_e$. The author concludes by pointing out that investigations of the corona emission lines may prove especially useful for determining the electromagnetic conditions in the active regions of the corona. There are 2 figures.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, AS USSR)

SUBMITTED: August 14, 1962

Card 2/2

S/203/62/002/006/002/020
A160/A101

AUTHOR: Mogilevskiy, E. I.

TITLE: The motion of multi-charged coronal ions in a magnetoactive solar plasma

PERIODICAL: Geomagnetizm i aeronomiya, v. 2, no. 6, 1962, 1041 - 1052

TEXT: The author investigates the possible nature of the distinction between the values of the electron temperature of the corona T_e, determined by the ionization theory, and T_z - the temperature of multicharged z-ions, determined by Doppler's contours of coronal emission lines. The first successful experiments carried out of the radiolocation of the Sun at a frequency of 38.25 Mc permit the assumption that the effective electron temperature in the corona at a distance of 1.5 $R_\odot$ is about $5 \cdot 10^5$°K. The author discusses the essential inequality of $T_z > T_e$ on the basis of a number of works and summarizes the observation data as follows. 1) The effective temperature of the z-ions (T_z), determined by the contour widths of the corresponding ions, is systematically higher (more than two times) than the electron temperature T_e. 2) There is a

Card 1/2

S/203/62/002/004/006/018
I046/I242

Internal structure of solar...

ric plasma. The energy transported by these low-frequency ($T \gtrsim 0.1$-10 sec) waves ($\sim 2 \cdot 10^5$ erg/cm^2.sec) provides an energy flux sufficient to produce magnetic disturbances ($\gtrsim 10^{22}$ erg/sec). The earth passing through the corpuscular stream twice crosses its magnetic field, and since within the stream the magnetic field is almost zero, each major magnetic storm should have two intensity maxima with a relative lull in between. From the way geomagnetic disturbances are generated, the time dependence of their intensity should vary with the geomagnetic latitude. Experimental results for moderate, large and very large storms confirm these theoretical conclusions.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere and Propagation of Radio Waves, AS USSR)

SUBMITTED: April 26, 1962

Card 2/2

42145

S/203/62/002/004/006/018
I046/I242

3.2430

AUTHORS: Afanas'yeva, V.I., Mogilevskiy, E.I. and Kalinin, Yu.D.

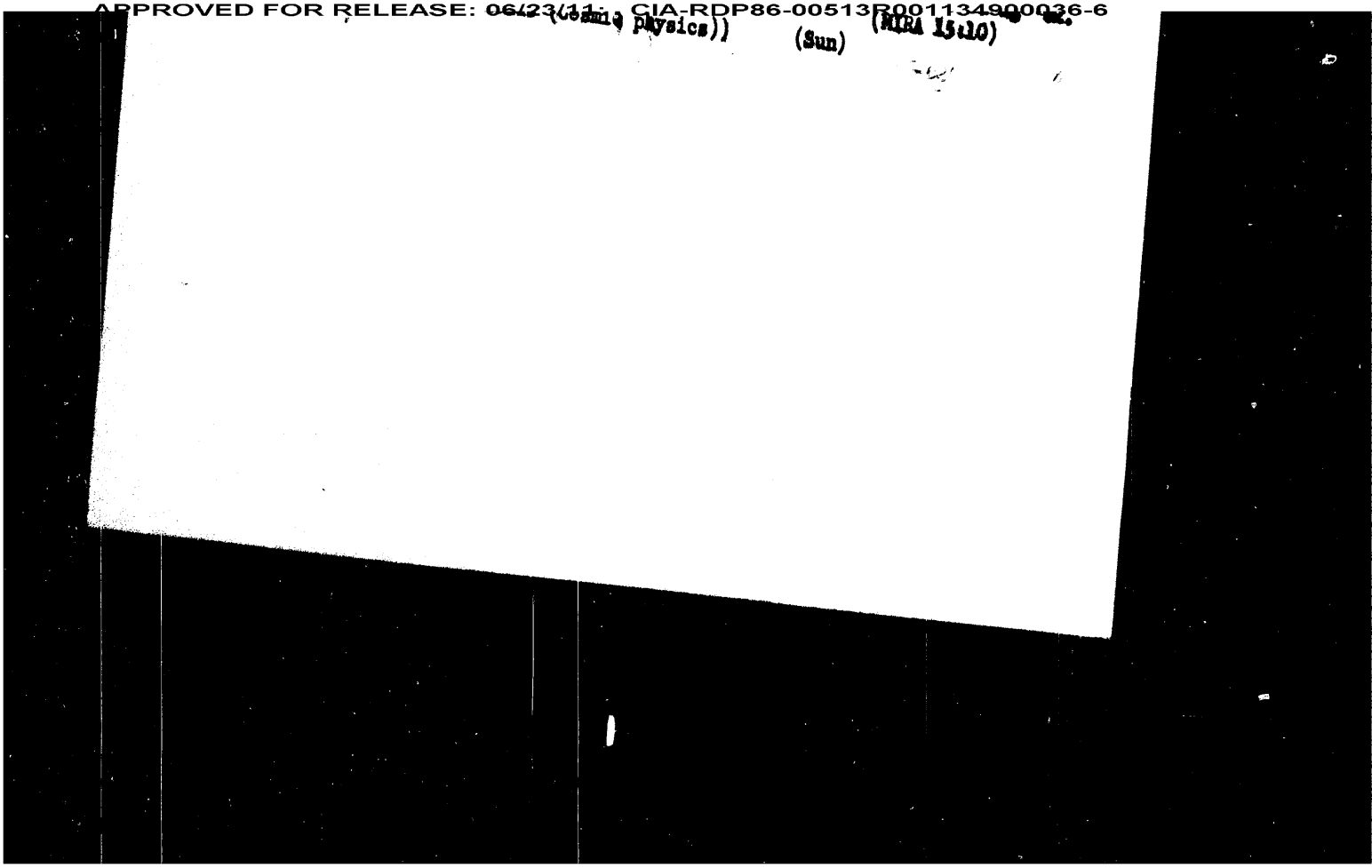
TITLE: Internal structure of solar corpuscular streams from geomagnetic data

PERIODICAL: Geomagnetizm i aeronomiya, v.2, no.4, 1962, 659-662

TEXT: According to Ref. 1 (E.I.Mogilevskiy. Geomagn. i aeronomiya, 1962, 2, No. 1, 48-55), the steady geoeffective solar corpuscular stream is a sequence of plasma clouds of $\sim 5.10^{11} - 10^{12}$ cm in diameter moving away from the sun. The geomagnetic disturbances result from the interaction between the terrestrial magnetosphere and the magnetic field (definitely not the plasma) of the stream which is forceless ($\vec{H} \cdot \mathrm{rot}\vec{H} = 0$) and essentially restr! ted to the surface of the plasma clouds: the field of the corpuscular stream, moving with a supersonic velocity with respect to the magnetosphere ($M \geq 10$), generates magnetoacoustic shock waves in the magnetosphe-

Card 1/2

(Cosmic physics)) (Sun) (MIRA 15:10)



Hypothesis of corpuscular solar streams...

contained in the radiation belts. At present there is no single experiment which could prove or refute the above hypothesis, only a detailed analysis of the data collected on Earth and their comparison with satellite data will prove or refute this hypothesis. There is 1 figure.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln Akademii nauk SSSR (Institute of Terrestrial Magnetism, Ionosphere and Radiowave Propagation, Academy of Sciences USSR)

SUBMITTED: December 6, 1961

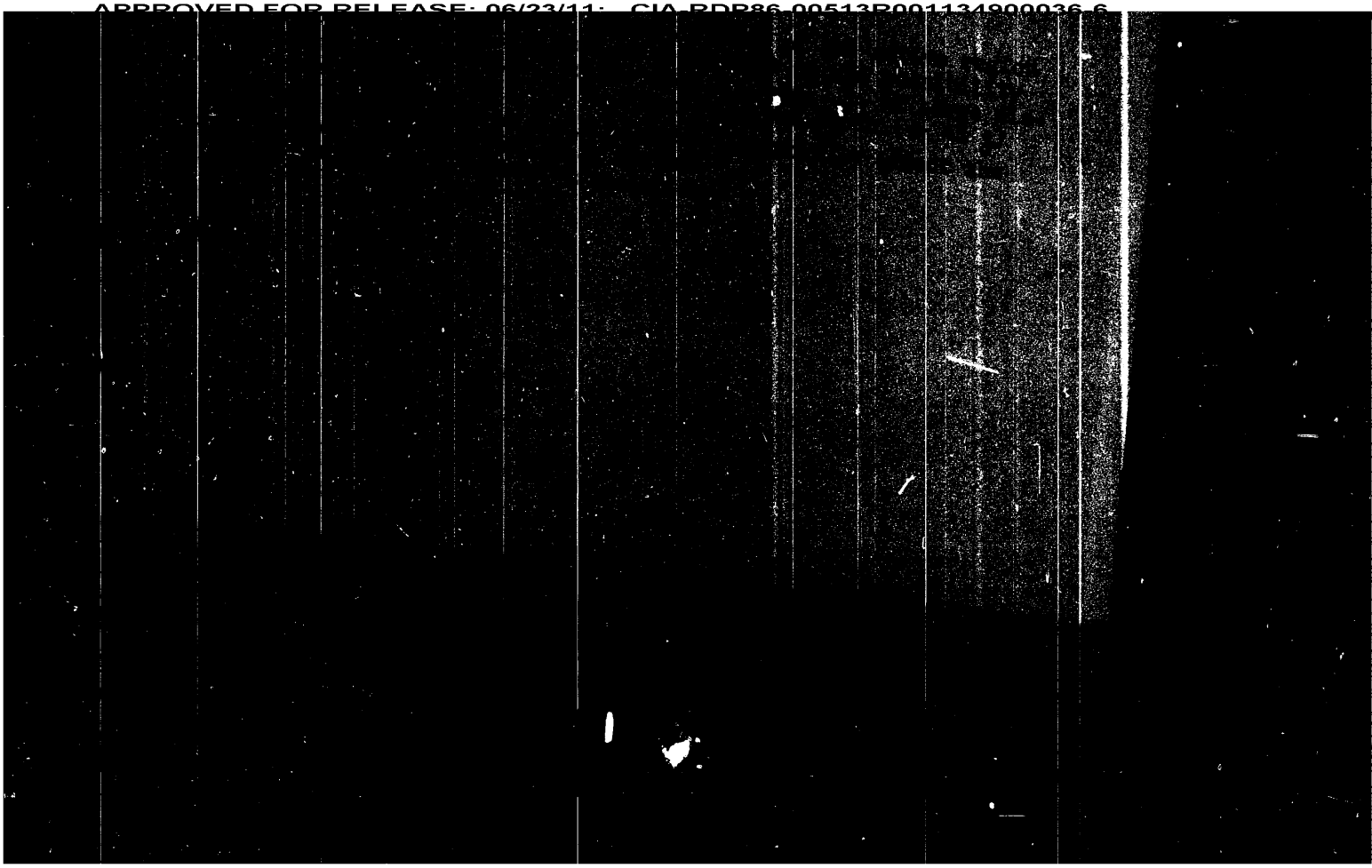
Card 3/3

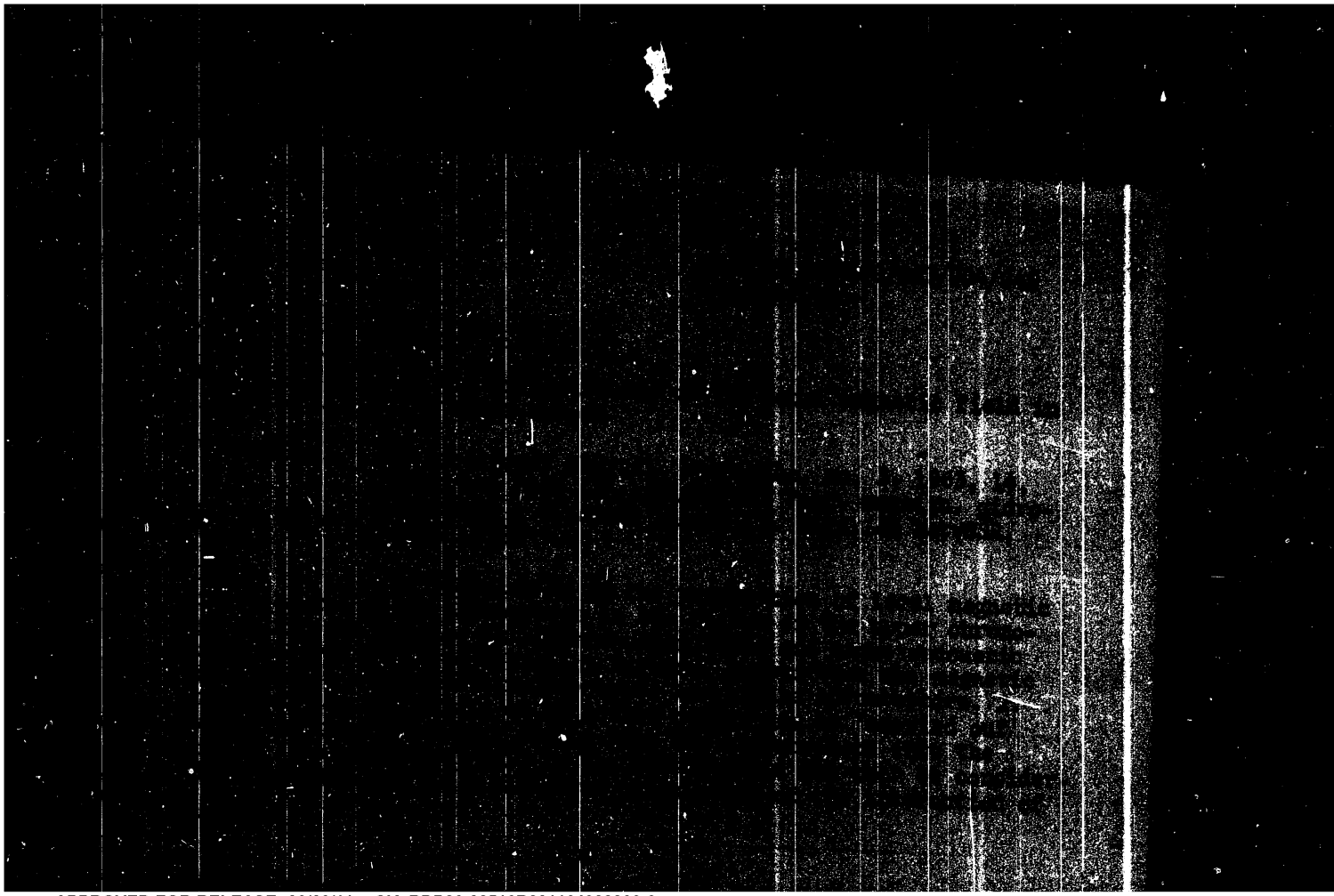
S/203/62/002/001/004/019
I023/I223

Hypothesis of corpuscular solar streams...

A graph shows the structure of the corpuscular streams in the interplanetary space. The magnetic trap of such a plasma cloud contains protons with energies up to several Bev. These energetic protons can be either of solar origin or trapped during the motion of the cloud from the Sun to the Earth. Some qualitative characteristics of the magnetic trap can be obtained by a detailed analysis of the spectrum of low-energy primary cosmic rays. Should the data from the Soviet rocket to Venus and from the American satellite "Explorer X" be confirmed by further measurements, it will prove that the magnetic field of the stream is not fixed in the plasma, but there is a magnetic field beyond the boundaries of the stream itself. Various geomagnetic and ionospheric effects can be explained by the interaction of the magnetosphere and ionosphere with the stream. Geomagnetic disturbances cannot be explained by the radiation belts of the Earth, because the energy of a geomagnetic storm is 2 to 3 times higher than the total energy

Card 2/3





On the radio radiation spectrum of type IV bursts

S/203/61/001/005/028/028
A006/A101

uously generated during the whole duration of a type-IV radioburst. There is 1 Soviet-bloc reference.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, Ionosphere and Propagation of Radiowaves, AS USSR)

SUBMITTED: September 15, 1961

Card 2/2

S/203/61/001/005/028/028
A006/A101

AUTHORS: Mogilevskiy, E.I., Akin'yan, S.T.

TITLE: On the radio radiation spectrum of type IV bursts

PERIODICAL: Geomagnetizm i aeronomiya, v. 1, no. 5, 1961, 843

TEXT: The authors analyze observations of type IV radiobursts in a wide spectral range for the purpose of revealing the nature of the first and second phase of the radioburst. The spectrum of the initial phase is a curve, increasing monotonously with higher frequencies, with a relatively low intensity in the meter range. In the second phase, the intensity of radio radiation increases with the wavelength. The spectral peculiarities of type IV radiobursts show that the initial phase can not be due to magnetic bremsstrahlung. It is a type-II radioburst which is preceded or accompanied by a type-III burst. The second phase is explained by magnetic bremsstrahlung of relativistic electrons. Equations are given for the spectrum of radio-radiation and energy spectrum of electrons. The analysis shows that relativistic electrons, determining the radio-radiation observed, can not arise as a result of a single flare but are contin-

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Some properties of...

radiosplash, occurs near the moment of the chromosphere flare's maximum, whereas the beginning of the Type IV radiosplash is close to the moment of the start of the ejection of the eruptive protuberance-filament. (2) The substantial (especially on the frequency 545 Mc/s) weakening of the intensity of the Type IV radiosplash is noted if the location of the chromosphere flare is near the limb; there is no such relationship for the Type II radiosplash. (3) The flow of energy in a Type IV radiosplash is about 2 - 3 times greater than in a Type II radiosplash. Certain peculiarities of the generation in the corona of the relativistic electrons and magnetic field necessary for the radionoise of Type IV splashes are briefly discussed. [Abstracter's note: Complete translation.]

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S/169/61/000/010/034/053
D228/D304

AUTHORS: Akin'yan, S. T., and Mogilevskiy, E. I.

TITLE: Some properties of Type IV radiosplashes in connection with the conditions of generation of the geoeffective corpuscular flow

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1961, 7, abstract 10G41 (Geomagnetizm i aeronomiya, 1, no. 2, 1961, 156-163)

TEXT: The analysis of the recording of Type IV radiosplashes is cited. The resulting statistical curves of the distribution of the intensity of Types IV and II radiosplashes in time show certain characteristic peculiarities which may, in particular, be used for determining the type of flare. The correlations of Type IV radiosplashes with those of Types II and III and with chromosphere flares are considered; these depend on the flare's location on the solar disc. The conclusions from the analysis are as follows: (1) The Type II radiosplash, which precedes the Type IV

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Abstracter's note: Complete trans-

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S/169/61/000/010/033/033
D228/D304

AUTHOR: Mogilevskiy, E. I.

TITLE: The penetration of local magnetic fields into the solar corona and the generation of geoeffective corpuscular flows

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1961, 7, abstract 10G40 (Geomagnetizm i aeronomiya, 1, no. 2, 1961, 153-155)

TEXT: The possibility in investigated of the penetration of local photosphere fields into the solar corona. The problem is examined in connection with the conditions of the generation and outflow of the sun's radiation. It is shown that local magnetic fields enter the corona together with the chromosphere clouds which carry the actual feeble magnetic-field that arises in the plasma cloud during its movement in the original local magnetic-field of the photosphere. The question is considered of the outflow of the geoeffective corpuscular cloud with the actual field

MOGILEVSKIY, E. I., AKINYAN, S. T., [redacted] I.,

"Some Features of the IV Radiobursts." ((II-3A-1))

report submitted for the Intl. Conf. on Cosmic Rays and Earth Storm (IUPAP) Kyoto, Japan 4-15 Sept. 1961.

[redacted], B. I.

"On the local magnetic fields in corona."

report to be submitted for the IAU Symposium on the Corona, Cloudcroft, New Mexico, 28-30 Aug 1961.

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[redacted], I. I. and NIKOLSKIY, G. M.

"On the polarization of coronal emission lines."

report to be submitted for the IAU Symposium on the Corona, Cloudcroft, New Mexico, 28-30 Aug 1961.